


The
Anatomy of Nervousness
and
Nervous Exhaustion

DR. CAMPBELL

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THE
ANATOMY OF NERVOUSNESS

THE
ANATOMY OF NERVOUSNESS

AND
NERVOUS EXHAUSTION

(*NEURASTHENIA*)

BY
HUGH CAMPBELL, M.D.
L.R.C.P. LOND.; M.R.C.S. ENG.

Fourth Edition.

LONDON
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PREFACE TO FOURTH EDITION.



IN the short time which has elapsed since the last edition of this work was published, no new light has been thrown on the pathology of nervous diseases. But in therapeutics, the Weir Mitchell treatment, treatment by Suspension, and treatment by Hypnosis or Suggestion, have advanced sufficiently in importance and the estimation of the profession, to warrant a notice in this edition.

HUGH CAMPBELL, M.D.

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THE DRINK-HUNGER IN WOMEN

*ITS CAUSES, CONSEQUENCES AND
CURATIVE TREATMENT*

BY

HUGH CAMPBELL, M.D., &c. &c.



PRINCIPAL CONTENTS

INTRODUCTORY OBSERVATIONS AND TREATMENT —
PATHOLOGY — STATE OF STOMACH, LIVER, HEART,
BRAIN AND OTHER IMPORTANT ORGANS—MUSCULAR
TREMOR — ALCOHOLIC HYSTERIA — THE SLEEP OF
DRUNKARDS—NIGHTMARE—DREAMS—SLEEP WALKING
AND TALKING.

LONDON : H. RENSHAW, 356 STRAND, W.C.

PREFACE TO THIRD EDITION.



THE demand for a third edition of this work having arisen, I have taken the opportunity to incorporate with it so much of my treatise on Neurasthenia (now out of print) as appears to me likely to increase its value for practical purposes.

So little has the study of nervousness, apart from structural lesions, engaged the attention of the profession, that almost all the literature of the subject will be found in the Appendix, as extracts from the published works of eminent neurologists.

HUGH CAMPBELL, M.D.

23 WIMPOLE STREET,
CAVENDISH SQUARE, W.

PREFACE TO FIRST EDITION.



THE diseases described in the following pages have received little notice from the general body of the medical profession, and have been either entirely overlooked, or only slightly glanced at, in works on nervous diseases. I am induced in consequence to call attention to them, even in a slight and sketchy manner, rather than allow them any longer to remain outside the pale of careful and earnest study.

A professional experience of many years, amongst all classes of the community, has convinced me, that the ailments produced by nervous exhaustion and reflex nervousness, though they excite but little sympathy or kindly consideration from friends and relatives, are fraught with more actual misery, mental and bodily, to the patient, than any other disease, no matter how grave may be its origin, or fatal its near or remote future.

HUGH CAMPBELL, M.D.

23 WIMPOLE STREET,
CAVENDISH SQUARE, W.

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PRELIMINARY.



ALL the functions of the body, mental and physical, are under the control of certain specific cells, located in some part of the cerebro-spinal and sympathetic nervous systems, and termed nerve centres.

Each nerve centre is designed and fully furnished, with the means of supplying, by a series of dynamic reactions, the nerve force required by the organ with which it is in relation.

The amount of this nerve force is a fixed quantity, somewhat in excess of the actual requirement, and cannot be exceeded without making such demands, on the centre, as will, if persisted in, materially weaken its powers of further healthy production.

Excessive demands upon a nerve centre produce molecular perturbations in its structure; these reduce its nutrition, impair its function, and unfit it for generating nerve force, except in an irregular, capricious, and uncertain manner.

The quality of the nerve force so produced may also be materially deteriorated.

When various centres are affected, either

directly or by sympathy, a condition of constitution is induced to which the term "neurasthenic" is applied.

The Influence of Civilisation in the Production of Nervous Diseases.—The nervous constitution, without any appreciable lesion of tissue, but with a notable deficiency of nervous force, is the basis of many important functional diseases, of the most dissimilar character.

Essentially the disease of civilisation and refinement, we observe it most, amongst the races which have made the greatest progress, towards a high intellectual standard; while pursuing at the same time the cultivation and the gratification of the senses.

The vices of civilisation also, and the neglect of hygienic laws, especially in crowded cities, play an important part, in the production of nervous diseases in the individual, as well as his offspring, by the reduced condition of constitution engendered, and the consequent inability to withstand the effects of severe mental strain.

If we take the history of our country from a date not even more remote than the Commonwealth, and mark the various and constantly recurring periods of great popular excitements, religious, political, and financial, which have prevailed to the present time, and add to these the habits of excessive intemperance, indulged in by our not very remote ancestors, we can see a very potent cause, for inherited nervous diseases amongst us.

All these show us the many difficulties, which in an artificial state of society, interfere with the preservation of a healthy and vigorous state of constitution in the people. It seems impossible almost, to preserve a family for many generations from some exhausting cause, although that cause need not necessarily be, of a vicious character, nor one for which the offspring, have reason to reflect on the progenitor. On the contrary, the affluence and social position of the individual may, as well as the nervous temperament, be the direct consequence of the severe mental toil, and triumphs of a distinguished ancestor.

The nervous constitution may exist in an individual, from an inherited tendency in the nerve centres, to undergo under very slight strain, a series of permanent disturbances, which would have merely a transient effect upon less sensitive and impressionable structures.

The hereditary nervous constitution.

Very few families in the present state of society could be found, in which a neurosis of some kind does not exist, either active or latent; if the latter, only waiting for circumstances favourable to its development, to manifest itself in some one of its phases. Thus nervousness must be accepted, as not only an hereditary, but a very prevalent disease, increasing rather than diminishing as civilisation advances.

Inherited nervousness.

The inherited nervous constitution, like other conditions depending on transmission from a parent stock, has a tendency to pass over individual members of a family, and even occasionally

skip a whole generation; and when it does appear, often manifesting itself in a very different form, from that which declared itself in the original. Thus, of half a dozen descendants of a nervous, dyspeptic, or intemperate or debauched ancestor, one may have a neuralgia of a most severe and intractable character, or die suddenly from an attack of angina pectoris; a second may be hypochondriacal, or a martyr to melancholia; a third may be afflicted with spinal irritation or chorea; a fourth with epilepsy; a fifth with hysteria; a sixth with spasmodic asthma; and while some escape altogether, others may have certain eccentricities of character which may remain as such, or eventually culminate in mental aberration.

The hereditary nervous constitution is not necessarily subject to disease, but is liable from the very commencement of life to derangements of nervous action, and is at all times more susceptible, to the influences of those conditions, which produce such derangements, than other forms of constitution. In infancy there is a liability to convulsions, in childhood to chorea, at puberty to those functional derangements, which depend, on the too rapid evolution of the sexual system, giving rise to chlorosis, ovarian irritations, and menstrual irregularities in the female, and exhausting spermatic discharges in the male. As life advances, we trace the same temperament in the neuralgias, sick headaches, attacks of angina pectoris, dyspepsias, hysterical

attacks, profound melancholies, and all the obscure and anomalous ailments, comprised in the term nervous.

Many of these peculiarities may remain latent in the individual, until some unforeseen circumstance calls them suddenly into existence, when they show themselves, with an intensity and a persistency, in direct proportion, to the extent of the hereditary tendency. The causes, which induce nervous exhaustion, in the previously robust constitution, act with more rapidity and force, on those constitutionally predisposed; hence excesses which would leave but trifling effects *at first*, on the non-nervous temperament, would have an almost fatal influence over the nervous.

As a counterpoise to these susceptibilities, there is, in the nervous constitution, a comparative immunity from febrile and inflammatory diseases, the average of life is not below the standard; and although to many, existence itself, may be almost insupportable, to others, and happily the greater number, it carries, not only a fair, but a very high, degree of enjoyment; for amongst its inheritors are found those who excel in the highest ranges of poetry and art, as well as those who, if deficient themselves in the creative faculty, are able to appreciate and enjoy the sublimest creations of others. Poetry, music, painting, sculpture, architecture, all that spring from the highest intellectual faculties, owe their supremest efforts to the former, while to the

latter, is given the boon of their thorough appreciation and enjoyment.

The brain and nervous system, bear a somewhat close resemblance, to a galvanic battery in constant action, whose duty it is to provide, a certain and continuous supply, of its special fluid, for consumption within a given time.* As long as supply and demand are fairly balanced, the functions which owe their regular and correct working to the fluid, are carried on with precision, but when by fitful and excessive demands, carried far beyond the means of supply, the balance is not only lost, but the machine itself is overstrained and injured, disorder first and disease afterwards are the result. This illustrates pretty clearly, the condition of a healthy and well-balanced brain and nervous system, supplying without an effort all the nervous force, required in the operations of the mind and body, so long as its work is in proportion to its powers, but if embarrassed by excessive demands, feebly and fitfully endeavouring, to carry on those mental and physical operations, over which it formerly presided without an effort.

In addition to the brain and spinal nerves, the great sympathetic system is materially influenced and injured by over-demand; and as inebriety, gluttony, venereal excess, and all the other vices of a physical origin, operate primarily on organs supplied by this system of nerves, and

* Herschel.

as this system follows the same law as the others, by which the more it is unnaturally stimulated, the more its powers decay,* it is easy to understand, bearing in view the intimate relations existing between it and the cerebro-spinal nerves, how indulgence in these vices will induce severe exhaustion, not only in the nerves primarily affected, but in those also affected in a secondary degree.

One peculiarity of the nervous constitution is specially worthy of notice, as it accounts for the many anomalous sensations of distress, discomfort, &c., which frequently afflict the individual, without any apparent reason, as well as for those vague feelings of alarm, at some unknown but impending danger, and that excessive depression of spirits and melancholy, which torment the nervous sufferer—viz., great susceptibility to atmospheric changes, especially such as involve much electrical disturbance.

The fact, of two daily tides of positive electricity, occurring in the atmosphere, is now fully established and recognised. These tides, are at the greatest height, between the hours of nine and twelve in the morning, and six and nine in the evening; while the lowest points, reached in the electric flow, are between two and five P.M. and one and five A.M.† The presence of this positive electricity, has a sustaining and exhilarating effect on the nervous, who it is well

* Proctor.

† Wislicenus.

known can, as a rule, employ their mental faculties, with more clearness and precision, and with less effort during the periods of high positive electric tides—the morning and early evening—while at the other periods, there is a sensible declension of mental and bodily power.

Negative electric currents, on the other hand, have a depressing and exhausting effect on the nervous; and this is evidenced in the unpleasant sensations, felt by them before a thunderstorm, when negative electricity abounds.

As there are daily tides of positive electricity, so are there also seasons. Autumn and winter are the periods, when it is in the largest volume in the atmosphere, and these are the times, when it is usual for the neurasthenic, to enjoy the best health and spirits; while in the late spring and summer, when the opposite condition of atmosphere prevails, they are usually, at the lowest point of health and spirits.

Cause of
suscepti-
bility, &c.

These manifestations of nervous exhaustion are due, no doubt, to certain changes produced in the natural state, of the microscopic molecules, of which the nerve substance is composed, whereby their healthy balance is lost, and the proper generation of nerve and muscle currents, interfered with. This state of disarrangement, is termed molecular perturbation, and in proof of the correctness of the theory just advanced, it can be shown, that artificial induction of these perturbations, gives rise to all the symptoms of nervous exhaustion, only limited in the amount

of prostration, by the extent of the disturbance; and if continued for any time, sets up all the symptoms of hysteria, dyspepsia, hypochondriasis, chlorosis, &c.* Now these symptoms are entirely due to these artificially induced perturbations, and are totally distinct from the true dynamic reactions, which, in the healthy molecular condition of the nerves, are produced in them, by the ordinary exigencies of existence.

In nervous exhaustion from hereditary pre-disposition, there is an unstable state of the ultimate brain and nerve cells, and a consequent tendency to generate and convey irregular and diminished nerve currents, without the tension, regularity, and steadiness of health. This inherited defect may not exist, in all portions of the nerve tissues, but may and frequently does localise itself, in one particular part—it may be in some part of the cerebro-spinal system, or confined to the sympathetic, and in either case it will manifest its presence, by giving rise to functional disorders, in those parts only of the body, which derive their nervous supply, from that particular centre.

A considerable amount of muscular development occasionally exists, in conjunction with a highly excitable and easily exhausted nervous system. This is more frequently the case, in the inherited nervous temperament, which might be expected, as the acquired nervous constitution, is produced

* *Vide* "The Experiments of Du Bois-Reymond."

by direct violation of the laws of health, which act as powerfully on the muscular, as on the nervous tissues.

General
character-
istics of
nervous-
ness.

The nervous constitution, when fully developed, predisposes to aberrations and arrests of nervous force, as shown in irritability of temper, uncertainty of disposition, defective will, want of self-reliance, hypochondriasis, melancholia, psychical or emotional impotence, defective assimilation and nutrition, nervous chills, cold feet, and a variety of minor ailments; which, unimportant singly, become, when grouped together, the cause of much discomfort to the individual attacked. Summer catarrh, hay fever, and asthma are of distinctly nervous origin, as are also spasm of the glottis and some forms of dyspepsia.

Nervous
mimicry.

In youths and delicate females, the nervous constitution predisposes to a very important and rather puzzling class of ailments, in which almost every form of disease, even tumours, is so closely imitated, without the will or consent of the patient, as to tax the experience and judgment of the most skilful. As these mimetic diseases occasionally drift, into those they are at first but imitations of, they are a cause of much anxious thought and care to the physician, accustomed to the study and treatment of nervous exhaustion in its many-sided aspects.

It is not uncommon to find the son or grandson, of a successful merchant or professional man living on the estate which his ancestor's labour has acquired for him, fulfilling all the duties of a

country gentleman, with ample means, in perfect health and spirits, with capital muscular development, and great powers of endurance, equal to all the labour of his station, a keen sportsman, with good appetite, good digestion, easy temper, and no cares or harass, suddenly, without any recognisable cause, evince all the symptoms of the nervous diathesis. An undefined feeling of wretchedness will seize him, he will experience all the misery of a man overburdened with care, and live in a state of perpetual alarm of some unknown danger, which is about to fall on himself or those he holds dearest; and yet with all this his mental balance is unimpaired; and if you reason with him, you will see he appreciates, as fully as you do, the absence of all external cause for his mental misery and distress.

Sudden invasions of nervous attacks.

Instead of these diffused feelings of wretchedness, the nervous exhaustion may manifest itself, by discomfort or derangement of function in some important organ or class of organs. Either of these conditions may become permanent, unless removed by treatment, or, what is not unlikely, disappear as suddenly and unaccountably as they came, to reappear in the same manner at some uncertain period in the future.

Sudden disappearance of nervous attacks.

It is quite clear, in such cases as these, there is a latent flaw, which, although inherited, has been kept under, until perhaps the middle period of life, by a healthy open-air existence.

Sufferers of this class, will generally attribute the first seizure, to some unimportant cause—

some circumstance so trifling, they will tell you, it was passed over at the moment without thought, and only recalled to remembrance by the process of tracing back for a reasonable cause of the malady.

Varieties
in the ner-
vous con-
stitution.

Every nervous constitution, while it has symptoms common to its class, has also many others proper to itself, the variety, character, and gravity of which depend on the number and importance of the exhausted and suffering centres implicated.

Induced
nervous-
ness.

The nervous constitution may be induced, in the most robust and least impressionable, by persistent and long-continued demands upon the nerve centres, much in excess of their capacity for the healthy performance of their functions.

In nervous exhaustion, from excessive use and abuse of nerve force, the molecular disturbances are very considerable, and as a consequence, the nerve currents are weak and insufficient; while the interdependence of forces, in the animal economy, is so great, that the loss of balance rapidly leads to insufficient nutrition, with morbid changes of chemical structure, which if long continued must end in degeneration of tissue.

Whether the nervous constitution be hereditary or induced, one thing is certain to the individual -- that anything which interferes with the natural direction of the currents, from any of the great nerve centres, produces severe func-

tional derangement. This is well exemplified by the experiments of Dr. Ranke of Munich, who found that interference with the natural direction of the current in the spinal cord of animals made them suffer from a morbid increase of reflex excitability, and brought on a most wretched and miserable state of health, while by restoring the natural direction, through the agency of mild galvanic currents, the animals were restored to health, and all the reflex excitability removed.*

Artificial
interference with
nerve
currents.

Now this condition in animals, which Ranke produced by reversing the natural current of the spinal cord, is strictly analogous to those states of the human sufferer, to which the convenient name of nervous dyspepsia is given, but in which derangement of digestion, is often very secondary to other more distressing symptoms; and had the great sympathetic system of nerves been subjected, to the same treatment as the spinal cord in these animals, they would have experienced all the long train of miseries which we sum up under the name of hypochondriasis, if their intelligence had been sufficient to enable them to appreciate their sensations, and their abilities been equal to the task of describing them.

Hypochondriasis is, in fact, the result of disturbance of the spinal and sympathetic systems, acting on a high degree of cerebral development,

* "Zeitschrift für Biologie," 1867, vol. ii. p. 398.

and if not removed, liable to pass on to degeneration of tissue.*

Induced
nervous-
ness.

That profound nervous prostration, may be induced in a previously robust individual, by his own acts, is undeniable; but in tracing back his family history it will frequently be found, that some earlier member of his family, either in a direct or collateral line, has suffered from some form of neurasthenic disease.

While a highly nervous or emotional temperament, is not incompatible with great muscular development, good digestion, and all the other factors which go to make up and complete the circle of health and healthy enjoyment, nervousness, as the term is generally understood, comprehends a vast number of peculiar and often very distressing symptoms, difficult to classify, yet all referable to an exhausted and much perturbed state, of some specific portions of the more delicate and minute structures of the higher nervous centres.

These perturbations manifest their existence in very unpleasant ways, often giving the impression of the presence of very grave diseases, and creating much anxiety, in the minds of the sufferer and his or her friends.

Earliest
symptoms
of nervous-
ness.

While nervous exhaustion usually makes its first appearance, in the guise of sleeplessness and depression of spirits, there is generally, in addi-

* Gull, in Reynolds' "System of Medicine," Article *Hypochondriasis*.

tion, great proneness to considerable functional derangements, in the more important organs; the digestion is frequently impaired, and accompanied by the flushings, flatulence, palpitations, throbbings, head and back aches, and various anomalous symptoms, which greatly distress the patient; there is also a growing inability to bear much exertion, mental or bodily.

In the sexes, the organs proper to each are, as the disease progresses, very liable to become implicated, if they have not in the first instance been the exciting cause. These special disturbances and derangements often, especially in the male, become the most trying and important symptoms, and exercise an influence over the patient's mind, of a most depressing and mischievous character, which requires the utmost care and thoughtfulness, on the physician's part to overcome.

Complications depending on sex.

Conditions of the blood exercise an important influence, over the production and continuance of many forms of nervous exhaustion. An impoverished state of the blood, as in anæmia, deprives the great nervous centres of the nutrition, necessary for their maintenance in the health and vigour, the due performance of their functions requires; so also a blood, bearing in its substance the poison of syphilis or gout or malaria, must of necessity, by its morbid effect, arrest or greatly diminish the generation of those nervous forces, without the due supply of which, the healthy functions of the animal economy cannot be performed.

Influence of the blood on nervousness.

Division of
symptoms.

The symptoms of nervous exhaustion may, for convenience of study, be divided into two distinct classes—viz., those affecting the emotional and mental faculties mainly, and those which are principally notable, for their influence over the physical state of the patient. Of these two divisions, the emotional are by far the more difficult to treat by the physician, as they are far more distressing for the patient to endure. Distinct as are, the symptoms, which divide these two classes, in practice no hard-and-fast line can often be drawn between them; they frequently are combined, the one predominating and often obscuring the other, or insensibly passing from one set to the other, and not infrequently becoming interchangeable, sometimes affecting the physical alone, sometimes the emotional, and changing again without any appreciable reason.

THE ANATOMY OF NERVOUSNESS

AND

NERVOUS EXHAUSTION.



SECTION I.

M E N T A L.

BRAIN FAG, or *purely mental exhaustion*, the disease of the hard-working scholar, literary man, artist, scientist, and all whose pursuits entail an undue amount of mental toil, without the rest, exercise, and agreeable change requisite to keep the mental faculties, in sound working order. The early symptoms of this ailment, are usually ushered in by impaired sleep; the patient wakes about four in the morning, and cannot settle to sleep again, till shortly before his usual time for rising, when he falls into a troubled slumber, from which he is aroused with an effort. If this stage is not arrested, it passes into the next, in which the sleeplessness becomes more confirmed: there is not only a state of wakefulness, but the mind is unpleasantly on the alert; either one idea takes possession of it, and recurs over

and over again, or a sentence from some well-known author, or a casual remark heard during the day, is presented to it with wearying reiteration.

This sleeplessness, apart from the discomfort of the moment, produces very serious results ; it is at once the consequence and the cause, of great nervous prostration. The brain, and nervous centres generally, receive their nourishment when at rest in natural sleep ; hence sleeplessness means starvation of these vital structures, and starvation naturally leads, to diminished and impaired ability to generate nerve force. The necessity of sleep, to the worn-out and nervously exhausted, is therefore of vital importance, for during the waking hours, the whole nervous system is too busily employed in carrying on the most important processes in the body to take care of itself ; instead of being nourished during the active hours of the day, it is parting like a galvanic battery in action with its force, generated and accumulated during sleep. It is only when the requirements of the other portions of the animal body are no longer necessary, that the brain and its dependencies have the opportunity of recuperating themselves in repose ; hence the individual who has enjoyed a good night's rest, wakes up in the morning renewed and refreshed, and equal to the forthcoming day of mental toil, while in the sleepless, in whom the expenditure of nervous force has gone on without the necessary restorative processes, the day is begun in an exhausted and lethargic condition.

Deficient Sleep is commoner than complete sleeplessness; some persons fall asleep directly they are in bed, wake up a few hours later, lie awake till towards morning then, worn out by watching, fall into a heavy slumber, from which they find it difficult to rouse themselves, and which is followed by dulness and lethargy. During the waking hours of the night, these sufferers have usually much mental distress to endure; all the troubles and sorrows, past, present, and anticipated, marshal themselves before them in dread array, and in the starved and enfeebled brain assume a magnitude by no means warranted by their actual importance, nor sustained by a calmer revision of them in broad day. The horizontal position in bed seems to favour the development of these dismal thoughts, for in the erect position they usually shrink back to their legitimate proportions.

Late and heavy suppers, and consequent indigestion, apart from brain fag, induce insufficient or fragmentary sleep in some persons, but not so frequently as nightmare and bad dreams.

A not uncommon symptom, in relation to sleep in the nervous sufferer, is the sensation of falling from a height when dozing off. Another very unpleasant one is a feeling of suffocation, which continues until the person so attacked sits up in bed, when it passes off, leaving much agitation in the heart and great vessels, which continues for some time after.

Individuals of an emotional or sensitive turn

Loss of
sleep from
emotional
causes.

of mind often have their sleep impaired by very trivial causes. A stray expression, dropped without special reason or even particular meaning, by a casual acquaintance in the course of the previous day, and which at the time made no impression on the hearer, will, in the watches of the night, start suddenly up and rankle in the mind to an almost unbearable extent.

Example
No. 1.

The same form of sleeplessness is common in nervous persons about to face an unaccustomed ordeal, as the chairmanship of a public meeting, a competitive examination, as witness in a law-court, or to enter on the duties of a new office, or, in fact, to commence anything out of the range of their every-day habits. As the mental perturbations in this class continue during the day as well as the night, much benefit can be done by the judicious use of reliable calmatives, which allay the nervous perturbations, and furnish the patient with the amount of self-reliance so necessary for the duties to be performed. On more than one occasion, I have had to calm in this manner the molecular perturbations of a highly nervous bridegroom. A well-known author, of a highly nervous temperament, an expectant witness in an action for libel, worked himself up to such a state of sleeplessness and panic, at the anticipations of a severe cross-examination, as to be a complete mental wreck for the time being; fortunately tolerably large doses of the appropriate nervine calmatives soon restored him to his mental balance, and to the much-needed sleep, and en-

abled him to face his legal torturer with a calm and equable mind, and to pass through the ordeal to his entire satisfaction. A gentleman accus-
tomed for the last thirty years to preside at public meetings, and to be listened to with deserved respect and attention, always suffers from sleeplessness for nearly a week before one of these meetings, simply from the nervous dread of an unknown something which he cannot define. Example
No. 2.

Drowsiness during the day, with or without sleeplessness at night, is in many individuals an accompaniment of brain exhaustion. It may occur on attempting to read, or after meals; or, indeed, at any time. In these cases there is usually a dull state of body and mind, an indifference and inability to apply the faculties to anything requiring thought; closely allied to this, is the habit of yawning and stretching, which often precedes a marked condition of neurasthenia.

Irritability, Mental.—In the earlier stages of brain exhaustion this is a common symptom: a fagged and badly nourished brain is unequal to the ordinary exercise of its functions without an effort, which it is difficult for it to perform, hence the minor worries of life assume an importance totally out of proportion to their real significance. The sufferer's senses, especially those of hearing, are acutely on the alert; hence sounds or noises, which in a healthier state would pass by unheeded, are absolute torture to him. On sufferers of this class, street bands, hand organs, the ordinary

noises of the household, the church bells, the constant rumbling of carriages as they pass, are a very serious infliction. More than one distinguished artist and scientist, whose business has necessitated a residence in town, has been done to death by organ-grinders. The late Mr. Babbage, inventor of the calculating machine, and the late John Lecch, the artist for *Punch*, suffered acutely from street noises. Hogarth's enraged musician, although a caricature, exemplifies very graphically what those who are acute of hearing may have to endure.

Deficient Mental Control.—In this state there is inability to bring the mind to fully comprehend—the thoughts wander away from the subject or are stagnant. The ear listens, and receives, as in a dream, but the mind does not grasp the import of the words. A speech or sermon will be patiently listened to, but not understood; even a theatrical entertainment, a concert, or a spectacle will pass before the mind as a blurred vision. The thoughts may be “wool-gathering,” or they may be simply suspended. I have known a man read a most interesting book carefully, from beginning to end, and yet not have a single observation or fact in it borne into his mind. Misapplication of terms is not uncommon in this state, not, as we find in actual brain disease, from serious changes of structure, but from a peculiar, inert, lethargic state, which disables the mind for the time to keep up the balance between idea and term.

Mental Unreadiness.—It is not uncommon to find persons, suffering from brain exhaustion, unable to reply, with their former readiness, to any question, simple or complicated. The power of mental grasp, is suspended or enfeebled. Persons suffering from this form of neurasthenia, will suddenly forget the name of the place or person they are about to visit, although in the course of a few minutes remembrance returns.

A condition analogous to Somnambulism is an advanced state of the affection just described, and indicates a still more exhausted condition of brain. One very notable case of this sort came under my observation lately. A clerk in a bank, day after day, for many weeks, received and paid away various sums of money, great and small, and transacted other bank business, without a single error, and yet without comprehending, in the least, the duties he was performing;—a state to which the term “automatic cerebration” may be fairly applied, as it is quite evident the habit of a specific occupation, carried on for years, had so impressed itself on the special faculties so continuously employed in its performance, that the necessary action went on without the actual participation of his inner consciousness, which remained suspended. Another patient complained, after severe mental work, thus: “If I were to go anywhere, or do any business to-day, to-morrow it would seem as if everything I had done was a dream, shadowy and unreal.” A gentleman, in describing this pseudo-somnambu-

Example
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No. 5.

listic state lately to me, said, "I feel as if I were standing off from the world and its duties, a mere spectator without interest or curiosity. If I make an effort to comprehend what I am engaged in, or what is passing before me, I feel as if my brain were enveloped in some dense vapour, which, struggle as I may, I cannot pierce through, but if I could, I would be all right again." A distinguished artist, after years of successful work, latterly found that a few hours' occupation in his studio induced so much mental exhaustion that all grasp of his subject was lost, and his mind became a blank so far as his art was concerned.

Example
No. 6.

Another gentleman, affected in much the same way as the last, described himself, in addition, as being "muddle-headed," with a sensation as if everything were moving backwards and forwards in a see-sawing manner, accompanied by a dreamy state of mind.

A Feeling of Loss of Identity, I have found on several occasions accompany severe brain exhaustion; in one patient it was so marked and constant, that, to use his own words, "he dare not walk in any lonely place by himself, for fear he might be seized with the feeling that he could not identify himself."

Example
No. 7.

A Feeling of Doubtfulness, with the conviction that it was mere fancy, and without any other evidence of loss of mental balance, was a very curious phase of nervous exhaustion in a gentleman under my care. If he left a train, a bench in the park on which he had been sitting, or a

Example
No. 8.

shop-window he had been looking into, he could not resist the impulse to return and pick his other self up, although, while in any one of the situations described, he had no feeling of his double being alongside of him; it was only after he left that the impulse came upon him to go back for his other self. The presence of a companion with a stronger will enabled him to resist the feeling, but some time would elapse before he could rest contented even then.

Inability to bear Responsibility.—The absence of responsibility in the conduct of business enables many highly nervous persons to carry on routine duties in a satisfactory manner, the weakness in their organisation not being known even to themselves, until circumstances arise to disclose it. The managing clerk in a private bank, who superintended the discount business, gave so much satisfaction to his employers, they rewarded his many years of valuable services with a junior partnership in the bank. From the moment he realised that any mistake in his selection of securities would entail some pecuniary loss to himself personally, his judgment became confused, a whole train of nervous symptoms suddenly appeared, and he had to resign that branch of the business in which he had previously been so successful. Much the same thing, but of a more disinterested character, happened in the case of the chief clerk to a member of the Stock Exchange. This gentleman, after conducting his office business in the most efficient manner for

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No. 10.

some years, was promoted by his employer to the highly responsible position of authorised clerk, in which capacity he had to buy and sell all kinds of valuable securities on his master's account. The dread of making mistakes in these transactions, and by an oversight or error entailing loss upon his employer, suddenly developed such a condition of general nervous excitement, it was impossible to continue him in his new position; nor did he recover his usual peace of mind and calmness until, after a lengthened holiday, he was enabled to return to his former irresponsible work. A country squire, chosen master of fox-hounds from his well-known nerve and courage in the hunting-field, was so overcome by his responsibilities in his new capacity, he lost all his former nerve, and eventually had to resign.

Example
No. 11.

Sudden Collapse of the Mental Faculties, a very treacherous form of brain exhaustion, very liable to attack the overworked barrister or public speaker, is often attended with very unpleasant consequences. A late very eminent novelist and public reader suffered from this in the latter part of his public career, and, unfortunately for literature as well as his family, did not take the warning in time to save so valuable a life. Some years since I was consulted for this affection by a very much overworked gentleman. He was a barrister, legal coach, and public lecturer, and had more work for his mental faculties than any healthy brain could stand. He lectured on

Example
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Example
No. 13.

popular subjects, both in London and the provinces, and was expected to devote two consecutive hours to his hearers—a long time to speak without the customary ten minutes' break. Latterly, he began to find the last twenty minutes of his lecture a very serious tax on his memory; he staggered in his discourse, got confused in his ideas, and was forced to bring his remarks to an abrupt and premature close, to the discontent of his audience, who looked for a better finish. When consulted by him, I suggested total rest from all mental occupation for a time, to allow his brain to lie fallow, and give his jaded faculties time to re-establish themselves; but he assured me this could not be, as the exigencies of his position necessitated work, and this branch of it was too lucrative to be abandoned, even for a time. It was then suggested that his lecture should be divided into two parts, and some light refreshment taken during the rest; this he said was impossible, from the nature of his subjects, as the interest would entirely fail if the thread of the discourse was broken. As he got on very well for the greater part of his lecture, and the brain-weariness did not show until towards the last twenty minutes, it was suggested he should commit to memory an easily remembered piece of poetry, more or less bearing on his subject, and when he felt the premonitory symptoms appearing, declaim it as an appropriate finish. This was accordingly done, and what between the relief thus gained, the

confidence it gave him in removing the dread of a fiasco, and the appropriate constitutional remedies, he soon recovered. As his lectures were delivered in different parts of the country, and consequently to different audiences, the little padding towards the end met with general applause.

Example
No. 14.

Defective and Uncertain Will.—In severe brain perturbations, this state is not uncommon. A gentleman much shattered in his nervous system, from the inordinate use of tea and tobacco, could never cross the road opposite his house, in a very quiet street, unless leaning on the arm of his wife; no other person seemed to give him the confidence he required. He had the complete use of his limbs, and once across, could proceed on his affairs without any further trouble. A person hurrying to keep an appointment, or to transact important business, will, when in this condition, be seized with an arrest of will, and feel it impossible to proceed with what he had set out to do. A clergyman living in a small village in the home counties, who is familiar with every one in the district, cannot meet face to face any one of his parishioners on a lonely road, and will look over a gate, cross a field, or actually turn back and retrace his steps, rather than attempt to meet them. This does not arise from shyness, as he visits them in the course of his clerical duties, and preaches to them every Sunday, without an effort, from his accustomed pulpit. This form of defective will is commoner

Example
No. 15.

than might be supposed. It is not confined to the weakly; the principal cases I have seen have rather affected the physically robust and courageous. A country gentleman, who could ride the most difficult and spirited horses with pleasure, was so defective in will, he never could decide any important matters connected with his affairs; not because, like the great Lord Eldon, he balanced so accurately the pros and cons, it was hard to arrive at a judgment, but simply because his mind wavered without a definite reason. Another gentleman invariably declined an invitation to dinner, but when the day for it arrived, always bitterly regretted he was not going. In trivial matters this uncertainty of will is very prevalent, and always indicates defective brain power. A gentleman once consulted me in whom this trait showed itself in a very ridiculous manner. At the dinner-table he never could make up his mind what dish he would partake of, and when the questioner, tired of asking, decided for him, he was always dissatisfied, and if the dish was changed for what he then said he wished to have, he grumbled at the particular part served him.

Example
No. 16.

Example
No. 17.

Example
No. 18.

Inability to allow the mind to be convinced that a certain act has been done, or done efficiently, is closely allied to the foregoing. A person will get change at a railway station, shop, or bank, and over and over again count the money, with a vague feeling it is less than it should be. I have known a gentleman, affected in this way,

Example
No. 19.

leave his bank with a considerable sum in his pocket, and after carefully counting it, get so troubled by his doubts of its correctness, as to be forced by his uncertainty to seek a quiet court or gateway to count it over again, and do this more than once in his progress homewards. Individuals of this class will lock a desk, or the street door, or put out the gas before retiring for the night, and yet with the knowledge they have done so, must against their will, their common-sense, and their personal comfort, return again and again to reassure themselves.

Morbid Shyness.—This form of nervousness usually originates in some genital derangement, in either sex. It seems more common in the male, and affects him most in his social relations with the opposite sex, although many are much overcome by it in meeting or addressing any stranger, or entering a room. One patient, who consulted me for this condition, was in other respects robust, but so shy, he could not enter a shop or post-office where young women served, without a very painful effort. Even in his own family, he could not visit his relations, if two or three of his female cousins were likely to be present. This gentleman had spent many years in one of the most lawless of the Argentine Republics, where, in talking to a person, or transacting business, the revolver and bowie knife were part of the usual requirements, and never displayed any trepidation or loss of nerve in these trying situations, yet the presence of one or two

Example
No. 20.

ladies would make him nervous and confused.

A gentleman, engaged in extensive business in the City, could never see a stranger on the simplest matter of business, although he could address a public meeting. His father had been similarly affected, but in a greater degree; rather than face the most ordinary caller at his private house, he would shut himself up in his bedroom, and, if much pressed to meet the visitors, would go to bed.

Example
No. 21.

Morbid Fear: Panic.—A clergyman in excellent health, but of a nervous family, made his life wretched by the constant dread of having diabetes at some future time; there was no history of such disease in his family, nor one single symptom in himself to suspect such an occurrence, still his mind could not be divested of the fear, and he perpetually dwelt upon it. Another gentleman,

Example
No. 22.

who suffered from sleepless nights, transferred the fear of illness from himself to his son, a healthy young fellow of twenty-three; his great trouble was, that this young man, who had never shown the least tendency to the disease, should become epileptic. As in the previous case, there was no family history showing hereditary tendencies of the kind dreaded. A young married lady lived in a state of senseless panic, whenever her husband travelled, lest some dire misfortune should befall him; and when assured there was no possible chance of it, then her dread was that some of their children might take a dangerous illness before his return. Two

Example
No. 23.

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No. 24.

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No. 25.

brothers suffered from nervous panic, but in reverse ways; the elder could never travel in an express train, the other in one which stopped at intermediate stations; both were in a perfect agony of unreasoning dread, if by mistake they got into the kind of train dreaded. A physician

Example
No. 26.

of middle age, harassed by hard professional work, when compelled to travel any distance by rail, was haunted by the dread of an attack of spasm in the throat if any one else was in the carriage, but not, if he had the compartment to himself. A lady under thirty, for many years resident in India, could not go into an assembly or church, if unable to get a seat near the door. The feeling that she could leave at any moment made her perfectly comfortable. If by chance she was so placed that egress was difficult, or inconvenient to those she must pass, she was seized with palpitation, difficulty of breathing, giddiness, or other symptoms of a disturbed nervous system.

Example
No. 27.

A gentleman, after four years' suffering from nervous exhaustion, was seized with a panic in church, and, as he described it afterwards, was afraid to rush out, and equally afraid to remain.

Example
No. 28.

A medical man, exhausted by much night-work, had an invincible dread of walking on ordinary pavement, especially if wet or slippery-looking. If this gentleman saw a man stumble in the street, he was seized with a trembling fit, and the same thing occurred if he saw a man struck on the stage, or heard a gun go off, or even if he saw a figure in a picture in a fighting or threatening attitude.

Example
No. 29.

Morbid Fear of Places is a very curious manifestation of brain exhaustion. There is no delusion in the minds of persons so affected, they know there is no real cause for their fear; still the exhausted state of the cerebrum disables them from contending with the dread which overpowers them. One young lady, *æt.* twenty-two, suffered intensely from this ailment, and was long ashamed to acknowledge it; another could not under any circumstances be induced to walk out at night, the mere asking her to do so brought on a paroxysm of terror. Example
No. 30.

Agoraphobia, a term first employed by Westphal, is now recognised by the profession as indicating a class of symptoms having their origin in severe brain exhaustion. As the word implies, the patient is afraid of open places, as the country at large, a square, or market-place. Persons in this state will shut themselves up in the house, in the warmest weather, and endure all kinds of personal discomforts rather than go out into the country, or any extensive open place. A young nursery-maid so affected, could never be induced to go a message out of doors. She would accept the commission cheerfully, and start to fulfil it, but the moment the street door was opened she recoiled with terror, and neither promises nor threats could prevail on her to proceed. There are many more cases of this ailment than are generally known; the sufferer, aware of the weakness and ashamed of it, takes all kinds of means to hide it, and often success- Example
No. 31.

fully, if entire master of his time and movements. Young ladies not requiring to exert themselves, or work for their daily bread, remain with this affliction upon them undiscovered for years.

Claustrophobia, or *Fear of Narrow Places*, is, as may be conceived, the opposite to the last mentioned nervous misery; in it the patient cannot bear a close confined room, in fact, can barely remain in an ordinary house at all, and is impelled by some mysterious dread to keep in the open air. In one case, mentioned by Dr. Meschede in Germany, the patient was seized with giddiness and confusion when in a small narrow room; in the summer he could not sleep in a room of any kind, but was obliged to camp out; in winter he slept in a very large, airy, well-lighted room. Professor Ball of Paris relates a number of such cases. Both of these forms of central nervous perturbation are associated with derangements of the reproductive system.

A diffused Feeling of Mental and Bodily Misery constantly attends derangements and perturbations in the great sympathetic centres, especially the solar plexus. These attacks generally come on with an "aura," or with a sudden sensation of a blow, or weak shock, at the pit of the stomach; that they depend on molecular changes in the ganglionic centres is proved by Remak's experiments on the lower animals.* A country gentleman recently consulted me for this condition.

Example
No. 32.

* *Vide* p. 13.

Starting in the morning with his sons to ride to cover, and looking forward in capital spirits to a very enjoyable day, he often, without any known cause, suddenly felt a smart tap at the pit of the stomach, quickly followed by an overpowering feeling of wretchedness and exhaustion, with all hope of enjoyment or even comfort gone for the day. All he could do was to return home and endure his misery alone.

These sympathetic perturbations may come suddenly and go quickly, as in the case just cited; more frequently they prolong their visitation for a considerable time. A late distinguished judge and peer was driven from the bench by an attack which lasted upwards of two years, and not only caused him much nervous distress all the time, but induced much muscular exhaustion and vascular disturbance; the least exertion, as walking across a room, or up or down stairs, brought on faintness, arterial throbbings, and palpitations. Formidable as all these symptoms appeared, they all yielded to treatment.*

Example
No. 33.

Blushing or *Flushing* on the least excitement, or without any, is a very common and most distressing symptom in the morbidly nervous. It may be associated with shyness, or exist alone. Sufferers from it declare it to be almost unbearable, and are quite overwhelmed with the dread of it. Many morbidly sensitive persons live the life of recluses rather than expose themselves to the

* Vide Appendix, p. 143.

Example
No. 34.

chances of an attack, as it is liable to come on at any moment, on meeting even the slightest acquaintance. A dissenting clergyman, of considerable repute in the pulpit, had to abandon his calling for some years, in consequence of this affliction. He could go through all the duties of his office fairly well, until he finished reading the hymn; when his troubles commenced, having to stand before the whole congregation during the singing of it; the moment the first note was raised, a fume, as he termed it, beginning sometimes in his lower limbs, sometimes at the pit of the stomach, gradually passed upwards till it reached his face, which then became suffused with a blush so intense, as to require a supreme effort of self-control to prevent him flying from the spot and never returning to it. These repeated attacks completely broke down his nervous system, and eventually for a time caused an entire suspension of his pastoral duties. In another case the

Example
No. 35.

patient, a stockbroker's clerk, was entirely free from the attacks except when his employer stood beside him, and overlooked his proceedings in the market; at all other times he was self-possessed and fully competent, but the presence of his master invariably brought on severe and painful blushings, with mental confusion. The effect upon his general health became at last so serious, he was forced to resign his situation and seek advice. One sufferer thus describes his case: "I come over as red as blood and the perspiration bursts from my forehead, if my employer even

speaks to me. I can't go anywhere from dread of blushing; in fact, life is a misery to me, and I want to be where I can't be seen by people. I have a dread, but as soon as it gets dusk I feel all right."*

Intolerance of Light, Irritable Watery Eyes, and a Habit of Blinking, are often added to the other symptoms, to the great aggravation of the patient's distress. Blushing is also occasionally interchangeable with tingling in the face and scalp, at other times with unpleasant sweatings, either local or general, but usually confined to the hands, feet, and axillæ.

Eye affec-
tions from
nervous-
ness.

A Feeling of Profound Exhaustion, as if life were ebbing away, is very alarming and not uncommon in advanced stages of nervous prostration; it is usually associated with some sudden giving way or arrest of nervous force in the great centre of animal life—the solar plexus. This condition is never fatal, and with judicious management yields soon to treatment, but is liable to return again without any well-marked cause. A remarkable case of this sort came under my observation lately. A young gentleman had been subject, a few years back, to frequent attacks of this ailment, but had quite recovered from them, and to all appearance was in robust health. Dining with some friends recently, and spending his evening in a quiet, cheerful manner, without undue excitement, he was suddenly seized, on

Example
No. 36.

* See further on this subject—"Flushing and Morbid Blushing," published by Lewis, Gower Street, London.

preparing to leave, with a deadly feeling of faintness, and an aspect as of a dying person. Cold, pulseless, and almost sinking, he remained for some hours too exhausted to be taken home, and was some weeks before he recovered. There was no heart disease in this case, nor could strict inquiry discover that he had indulged to any extent in either stimulants or food, or partaken of any dish liable to disagree. I have known a similar seizure occur in a highly nervous woman, after an unusually profuse discharge of urine.

Morbid Craving for Stimulants or Narcotics.—The sleeplessness and feeling of prostration from which the highly nervous suffer, naturally predispose to a desire for such stimulants and narcotics, as are likely to give relief and comfort, however temporary the good effects may be. This desire, if not carefully guarded against, may give rise to a morbid craving, likely to produce, if not resisted, most disastrous results. It must also be remembered, that many nervous sufferers inherit their constitutions, from intemperate ancestors, and that therefore a latent proclivity may exist. The danger is much increased where this inherited tendency exists. For this reason, as well as others, bearing on the patient's condition generally, the employment of these useful, but highly dangerous remedies, must be exercised with great caution. Shy persons, and those who suffer from blushing, are very apt to resort to stimulants to obtain a sort of Dutch courage, to enable them for the moment, to overcome their

ailment. In the earlier stages of nervous diseases, stimulants and narcotics are often very badly borne, and consequently are mischievous; even the usual and accustomed light table wines and beers cannot be tolerated. I have on more than one occasion heard a patient, who had had recourse to wine, say, that every glass he drank only made him weaker; and no doubt, in many similar cases, alcohol, even in the form of wine, acts as a direct paralyser of the more important nervous centres. In more advanced stages, stimulants and sedatives judiciously employed are often important adjuncts to the more direct treatment.

Hypochondriasis.—This disease is invariably confined to individuals of the hereditary nervous constitution; its main feature is a tendency on the part of the patient to withdraw the mind from all interest in ordinary pursuits, and concentrate it on some particular organ of the body, which he believes to be seriously diseased, even after being repeatedly informed by many physicians that he is mistaken. This habit of close and continuous self-examination, has the evil effect of disclosing to him various little trifling sensations, which may exist unnoticed in the healthiest, but which with his mental bias assume the proportions of dreadful disease. A slight discomfort at the pit of the stomach, is heightened by his imagination into a vague uneasiness, increasing through his dread of disease into a burning or gnawing pain. The development of these, and other anomalous symptoms, is very

much increased by the patient's proneness to read medical books, and to discuss his symptoms with others. The loose and distorted scraps of medical knowledge he picks up, joined with the speculations of his acquaintances, and probably the oracular observations of some dispensing chemist consulted by him, lead him to discover all sorts of serious diseases one after another in himself. The panics thus produced are sure to set up considerable functional disturbance, which is of course mistaken for grave disease, and his life is consequently passed in utter misery. Emotional states of this description, do materially interfere with healthy function in important organs; hence violent palpitations, local throbbings, arrest of secretion or excretion, producing dryness of skin, biliary derangements, jaundice, diarrhœa, &c. &c., give a colouring to his fears. A common belief by the patient is, that he has serious heart disease; or, if his speculations run in the direction of sexual matters, that he is impotent from obscure genital derangements or seminal loss. As any portion of the nervous centres may be affected in hypochondriasis, and as the perturbations of these are often interchangeable, the organs receiving their nervous supply from these centres, naturally undergo the same changes; hence the frequent shifting of the symptoms from one important organ to another. One notable fact connected with hypochondriasis is the hopefulness of the patient; much as his symptoms engross his attention and alarm him, he still cherishes the

idea of being cured, and, notwithstanding frequent failures and disappointments, looks forward to the time, no matter how distant, when he will be a sound man again. In this he differs entirely from the sufferer from melancholia. In this latter ailment the patient, almost from the first, abandons himself to despair, while his friends are smiling at his complaints and ridiculing the importance he gives to symptoms, which they consider trivial. Nervous force in these cases is so defective, its generation so incomplete, that the mere act of living—the efforts of the great organs to fulfil their tasks in the animal economy, are so forced and strained—is itself an intolerable burden. Patients in this condition would commit suicide were it not too great an effort to do so. I have been often told by them they craved for extinction, but had not vigour enough to cause it by any act of their own.

Difference between hypochondriasis and melancholia.

The Melancholy of Youth.—As puberty is approaching, and much of the formative force is being withdrawn from the great nervous centres, to the development of the organs of sex, a mild form of melancholy is not uncommonly found in delicate youths and young girls. In the male there is a strong aversion to society, a desire to dwell on thoughts of death, to visit cemeteries and indulge in gloomy anticipations of the future, and mourn over lost opportunities and a blighted life—before the serious business of life has commenced—a form of affectation not infrequent in highly strung emotional youths. In girls the

Melancholy passing

into hys-
teria in
girls.

attack takes on a decidedly hysterical character, the feelings of depression alternate with times of unusual excitability, especially as certain periods approach. There are also frequent paroxysms of hysterical weeping, a disinclination to employ the mind in any occupation or amusement, an indifference to the interests of the family, a capricious and irritable temper, and a desire to make every one near her as miserable as herself. Sometimes in both sexes the disease merges into a form of hypochondriasis; the patient takes to self-examination, becomes absorbed in his or her feelings and sensations, and eventually is convinced of the presence of serious bodily disease, when nothing of the sort exists. In these cases the bodily nutrition is generally at fault, there is want of tone in the whole system, digestion fails, the skin is sallow and harsh to the touch, the extremities are cold, respiration slow, there are frequent deep sighs during the day, and moanings during the sleeping hours, while the patients almost always complain of total loss of sleep. If not removed by judicious treatment, melancholia becomes chronic, when further very grave symptoms develop themselves, which it is not within the scope of this work to consider.

Anorexia Nervosa.—Complete suspension of power in the gastric branches of the pneumogastric, is occasionally met with in a member of a neurotic family. The patients are generally young girls about fourteen, or a little older, though very marked cases are sometimes met

with at a much earlier age. The disease may occur in males. The leading feature of the case is complete want of appetite (anorexia) leading to extreme emaciation, with slow pulse, sub-normal temperature, and very few respirations. Associated with these depressed functions, there is remarkable restlessness, a disposition to be always on the move or walking out of doors, though the appearance of the patient in the streets is certain to attract general attention. Most of the cases occur in the colder months of of the year.

Sir William Gull relates a case of a plump, healthy girl who suddenly and without any apparent cause evinced a repugnance to food; and soon afterwards declined to take any whatever, except half a cupful of tea or coffee. Six weeks from the commencement of the attack she was in the last extremity of emaciation, the respiration was reduced to 12 to 14 in the minute, pulse 46, temperature 97° , height 5 ft. 4 in., weight only 4st. 7lbs, extremities blue and cold. Examination disclosed no organic disease. She persisted in walking through the streets, though an object of remark to the passers-by, and expressed herself as quite well.

Similar cases are not unusual but they rarely yield to treatment so quickly as this one did, as she was quite restored after six weeks' judicious management.*

* *Vide Lancet*, No. 3368, p. 516.

SECTION II.

PHYSICAL.

A prominent symptom may mask minor ones.

The Physical Symptoms of Nervous Exhaustion are many and various. They usually exist in groups, but one very marked and important symptom may assume such prominence that the minor ones are completely masked by it, and do not make their appearance until the graver one is subdued. For this reason, a patient is often thought to be developing new symptoms, when he is only disclosing old ones, which have escaped attention during the presence of a very pressing one. One very prominent symptom, which often overshadows and obscures a host of others, is vertigo.

Various causes of vertigo.

Vertigo, or *Giddiness*, may depend on other causes besides nervous prostration, but it is so constant a symptom of that disease, it deserves special attention. Giddiness from loss of nervous force may show itself in two ways: in one form, the patient feels it within his head, and seems to move himself, while all objects are stationary; in the other, he appears unmoved himself, but all objects within his view move; sometimes, in the most grotesque manner, objects will appear

to elongate to a great extent and then suddenly shut up, the pattern on the wall-paper will move about, or appear askew, and many other aberrations of sight (always in motion) will occur. With either form of giddiness, some of the organs of special sense may be also at fault, there may be dimness of sight and noises in the ears. *Vertigo*, if long continued, is liable to become complicated with disturbance of the power of balancing the body; the person attacked inclines, in spite of himself, to one side in walking, sidling across instead of going straight. There is also a dread of falling, or a swimming or floating sensation, which compels him to catch hold of some fixed object to prevent him rising in the air as he thinks; objects also become blurred or misty.

Complications with other organs.

Attacks of giddiness are usually intermittent; they are often brought on by excitement, fatigue, or long fasting, and when so produced may be relieved by food and moderate stimulation. The patient may be seized in either the erect or horizontal position, or even in his sleep, and the sensation may enter into his dreams. Giddiness is sometimes periodical in its visitations, occurring daily about the same hour, and lasting for the same time. When it is caused by overwork or mental harass, in young or underfed persons, or those who suffer from abnormal losses, or the exhaustion of excessive venery, there is confusion of intellect, loss of memory, inability to fix the mind on any subject, irritability of temper, dull headache, palpitation of the heart, pains in the

Giddiness from a lowered vitality.

loins, and deposits of phosphates or oxalates in the urine ; all the results of a lowered vitality, a defective nutrition, and loss of nervous force.

Chorea—St. Vitus' Dance—when not of rheumatic origin, always occurs in individuals with an hereditary nervous history. Delicate boys and girls on the border-line of puberty, or a little earlier, are the most liable to the affection. It usually begins in tremulous movements in one of the limbs, so slight at first as to escape observation. If it happens to be a leg which is first attacked, the patient begins soon to drag it ; the hand of the same side quickly sympathises with this movement. The symptoms increase now in a very marked manner. The affected hand becomes uncontrollable ; if laid across the breast by a bystander, it is suddenly jerked away convulsively ; if a cup or other vessel is placed in the hand, it cannot be carried to the mouth except by a number of spasmodic movements of the utmost grotesqueness, and when it does reach it, the contents are thrown down the throat rather than swallowed. These symptoms are usually restricted to one side, or at all events more marked. Any exercise of the will, or excitement, increases the spasmodic movements. The tongue is in many instances both protruded and withdrawn with a sudden jerk, the face becomes implicated in the general muscular disorder, and the most ludicrous though painful contortions may be observed. All these movements are arrested by sleep. Sensation and per-

ception become impaired, as the disease advances ; the body, especially the affected portions, is partially insensible to touch ; the features assume a dull vacant look, and there is listlessness and indifference, even where the natural disposition of the sufferer has been unusually bright, lively, and restless. In most instances the patient slowly recovers, the symptoms retiring in much the same order in which they advanced, but frequently leaving some slight symptom behind, which may continue for life, showing itself only under emotional excitement, as persistent winking, twitching of the face, &c. &c.

Neuralgia is the most painful of all the physical symptoms of nervous exhaustion. It generally follows the course of some particular nerve, coming on suddenly without any appreciable exciting cause, and continuing for a longer or shorter period, without producing much, if any, constitutional disturbance. These attacks, except when of very long standing, are always intermittent, often distinctly periodic. During the interval there is a total absence of the peculiar neuralgic pain, but the course of the affected nerve and the parts supplied by it may remain sore and tender for some time after. The most important neuralgias are those which attack the various branches of the fifth pair of cerebral nerves, distributed principally over the forehead and face. Of these migraine and clavus hystericus occupy the most prominent place, both from importance of situation and severity of suffering.

Important varieties of neuralgia.

Migraine and *Clavus Hystericus* may be classed together, as they both attack the same set of cerebral nerves, and differ only in character, the migraine being less concentrated to a point than clavus. Although migraine is also called sick

Sick head-
ache.

headache, there is no derangement of digestion accompanying it, the vomiting with which the attack usually subsides being merely sympathetic with the head suffering. Anything which materially lowers the vitality of the neurasthenic, favours the invasion of this very painful neuralgia.

Symptoms. The attack usually commences on one side in the notch in the bony arch of the eyebrow, and spreads upwards on the same side of the forehead; the intense pain affects the eye, which becomes bloodshot and watery, there is great intolerance of light and motion, the eyelid is drooped or jerked convulsively, the pulse, at first slow and small, gradually becomes full and rapid, and the feet are cold. As already stated, the attack passes off usually by a fit of vomiting. The essentially nervous nature of the ailment is shown in the fact that with the subsidence of the attack, the patient passes large quantities of colourless urine.

Gastralgia is a very painful and somewhat dangerous neuralgia of the stomach; it differs from gastrodynia—the pain of dyspepsia—in the notable fact that, while the latter is brought on by food, and increased by pressure, the former is relieved by both. An empty stomach and consequent exhaustion are always its exciting causes.

Cause.

It is unmistakably the result of constitutional debility, and is frequently associated with palpitation of the heart and much mental depression.

In the highly nervous, very many forms of neuralgia besides these already mentioned may be found. In females the uterus and ovaries are liable to be attacked, and the severe suffering produced increases the other nervous derangements to a very considerable extent. The male organs are occasionally affected in the same way, but rarely to the same extent, and the consequent constitutional disturbances are less marked.

Various kinds of neuralgia.

Neuralgias of the Throat, Windpipe, Bladder, Kidneys, Rectum, in fact, of every known part of the human economy, may exist in those suffering from severe nervous prostration. One highly dangerous form of neuralgia cannot be passed over without a special notice; the disease is fortunately rare, but well-marked cases have come under notice, viz. :

A highly dangerous neuralgia.

Neuralgia of the Heart.—This most painful and dangerous disease, often confounded with angina pectoris, appears with great suddenness. In the midst of some unusual emotional effort, or even without any effort, the patient is attacked by a severe pain at the lower part of the sternum; this pain darts through the back and left shoulder, and nearly always runs down the left arm; it may diffuse itself over the whole of the chest, increasing the patient's sufferings by the additional sensation of cramp, or crushing in, of the walls of the chest, and the feeling as if

the heart was grasped by an iron hand. No more dreadful feelings can be conceived beyond those produced by this dire disease.

Tenderness of the Scalp, without being strictly a neuralgia, is closely allied to it; it may be taken as an evidence of the presence of some amount of cerebral irritation. The scalp is usually so tender, the merest touch of the hair gives discomfort, and brushing it produces actual pain. In some cases which have come under my notice there is much heat and a feeling of burning quite perceptible to the observer's hand; this is most commonly felt at the top of the head.

Pain, Pressure, and Heaviness in the Head, commencing at its back on one side, and passing directly through to the eyeball of the same side, is a very common accompaniment of severe nervous disturbance. In these attacks the eye is often bloodshot and watery, with a tendency to squint. There is also a floating feeling in the brain, a puffy, pasty appearance of the face, and a generally pallid and bloodless state.

Muscae Volitantes, floating specks before the eyes, may exist from stomach or liver derangements, but also as an evidence of nervous exhaustion, affecting the optic nerve. They rarely yield completely to treatment, often remaining, or returning at intervals, even when the nervous powers have entirely recovered.

Drooping of the Eyelids.—A lady of a highly nervous temperament, who had exhausted herself

by long and severe study, lost the power of raising the eyelids, or if raised mechanically, of retaining them in that state. Under appropriate treatment the control of the lids returned, but for a time there was a tendency to a return of the weakness under the least fatigue or excitement. Ultimately she completely overcame it, when her nervous system became stronger.

Noises in the Ears, like *Musca Volitantes*, are frequent accompaniments of nervous exhaustion. There is usually fulness and oppression in the head, and a pumping feeling in the blood-vessels of the head and neck, and more or less emotional palpitation of the heart.

Irritable Heart and Irregular Pulse.—These two conditions, together or apart, give rise to much alarm and discomfort, when they appear in the course of an attack of severe nervous prostration. They are strictly emotional feelings, quite apart from heart disease. The least mental excitement will influence the irritable heart painfully and perceptibly, increasing the beats from the natural standard to upwards of 100. The irregular pulse of the nervous is also well marked, and totally different in its character from the intermittent pulse of heart disease.

Unhealthy States of the Skin and Mucous Membranes.—The highly nervous are liable to suffer from dry scurfy states of the skin, especially about the head and neck and palms of the hands. The mucous membrane of the lips, tongue, gums, and throat is often much con-

Abnormal
sweatings.

gested and tender. In opposition to the dry state of skin, there may be profuse sweating of the whole body, or it may be confined to the palms of the hand, soles of the feet, or the axillæ.

Predisposi-
tion to hay
fever.

The susceptibility of the mucous membranes in persons of nervous constitution, renders them very liable to attacks of summer catarrh and hay fever, ailments depending upon the presence in the air of minute floating particles. Excessive light also affects them, producing symptoms very similar to catarrh.

Nervous Dyspepsia is always a consequence of low vitality in the system. In this state the circulation is depressed, the pulse weak, soft, and easily compressible, slow when the patient is at rest, but easily excited on the slightest exertion. Palpitation is common; it occurs irregularly, and independently of heart disease, and is due either to flatulent distension, or to reflex irritation of the pneumogastric nerves. Many patients are so persistently troubled with this form of heart disturbance, with or without difficulty of breathing, on the least exertion, that their minds very naturally become impressed with the conviction they are suffering from advanced heart disease.

Functional
disturb-
ances of
the heart
and other
organs.

The nervous system in many ways indicates its defects; there is languor and inaptitude for exertion, a sense of weariness in the limbs, especially after meals, passing after a little time into drowsiness, which, when yielded to, affords a heavy unrefreshing sleep. The intellectual

faculties are dulled during digestion, especially the memory and perception, and the temper is apathetic and timid. This state causes much injury to the constitution by impairing the general nutrition, and thus further aggravating the nervous exhaustion in which it originated, and predisposing to disease in other essential organs, as the brain, lungs, heart, and kidneys.*

Hysteria.—In the highly nervous constitution, where a loss of proportion, or want of balance between the emotions and the will exists, a train of anomalous symptoms is apt to make its appearance, especially in the female, although the same condition of nerve perturbation is often attended with the same results, in the delicate and only partially developed male, about the period of puberty. The general symptoms of hysteria, in either sex, indicate usually an insufficiently nourished body and a highly emotional state of mind, the digestion is weak, and nausea, disagreeable eructations, and even vomiting, may be present, also much flatulence, palpitation of the heart, difficult of breathing, and sudden syncope. The urine is copious, pale, and rarely of much higher specific gravity than ordinary water. Some writers associate hysteria with some form of derangement in the sexual organs, but carefully compiled statistics do not bear out this view, although no doubt irregularities in these organs very frequently occur, but

General
symptoms
in either
sex.

* Wilson Fox,

rather as a consequence than an exciting cause. The mental state of the individual in whom hysteria is fully developed is peculiar; there is a very strong belief in the importance of self, a conviction that the usual laws of life, and her relations towards her family and the world generally, are different in her case from others. The emotional state of the mind, overpowering the judgment and discretion, gives rise to an irritable and capricious disposition, which inclines people to bestow little kindness and sympathy upon the sufferer. The conduct of a patient—a female especially—during an hysterical attack varies considerably. At times there is merely an emotion carried to immoderate excess, which, under ordinary indulgence, would be usual and natural, as weeping or laughing. More frequently these two emotions become rapidly interchangeable, tears alternating with laughter, and passing on to screams, with convulsive movements of the body and limbs. In the fully developed hysterical state in the female, the attacks usually commence with depression of spirits, or perhaps some physical discomfort, about the approach of the monthly period; there is headache, and perhaps cramp, and numbness in the limbs; a feeling in the abdomen and chest as of a ball rolling about, which, rising into the throat, produces a sense of suffocation or choking. In this state, the breathing becomes hurried and irregular, the heart palpitates violently, and the countenance becomes flushed

and pallid alternately. When this stage is reached, the attack either gradually subsides, or more frequently the patient falls, screams, pulls her hair, and undergoes a variety of bodily contortions. The general appearance of the patient in this condition is very distressing and alarming, but there is not the slightest element of danger in it, and the complete recovery from all these symptoms is only a matter of time—a few hours, or even a few minutes, as it may be.

Hysterical Paralysis.—The balance between emotion and will being reversed in the hysterical patient, the former overpowering the latter, loss of muscular power governed by the will induces a form of paralysis not uncommon in advanced hysteria, but sometimes, though rarely, existing without any symptom of hysteria to lead the physician to a true estimate of the disease. Usually one limb, or only a portion of it, is involved, but in many cases a species of incomplete loss of muscular power down one side exists, in which the face and tongue rarely participate. On careful examination, the paralysed state of the limb will be found to differ in many notable particulars from true paralysis: there is no effort to lift the affected leg from the ground; it is merely dragged along, like a piece of inanimate matter; and yet, as the foot is drawn forwards, its extensor muscles act, and the great toe is elevated, the opposite to what occurs in actual paralysis, where, on moving the limb, the toes droop and are devoid of all motion. In hysterical

Difference
from true
paralysis.

paralysis, it may be observed that the patient looks at the observer, while in true paralysis the looks are directed to the affected limb. In attempting to walk, the sufferers from hysterical paralysis, in spite of help on both sides, will tumble down to within a few inches of the ground, and yet, unassisted, recover themselves. When once established this state of things is very hard to cure.

Nervous Mimicry,—imitation of real diseases, brought on without the act or knowledge of the patient. This curious and interesting state of the nervous constitution induces a close imitation of the gravest and most dangerous diseases, both medical and surgical. The sufferers from the affection are always such as from early childhood have shown a highly emotional disposition, they are the descendants of neurasthenic ancestors, and often develop a tendency towards the more painful neuralgias. They bear fatigue badly, and break down under very slight mental strain. Females are more subject to the disease than males, although delicate youths and feeble men of middle age are not free from it. The false symptoms of surgical diseases will often puzzle the experienced practitioner. A phantom tumour, under even his accustomed hand, will take on all the characteristics of a real one, joints will appear diseased or deformed, lameness will be counterfeited, the darting pains of cancer will be accurately described, and yet in no instance will actual disease of any of the invaded struc-

Inherited
constitution.

Surgical
mimesis.

tures exist. Considerable derangement of the whole alimentary canal is usual in these cases, also palpitations, loss of voice, and short febrile attacks. The nervous mimic, unlike the hypochondriac, is never in a panic over the malady, but rather disposed to take credit for the sufferings it produces.

Imitative Tetanus.—Dr. Vincente G. Guánchez, writing in the *Revista Científica de la Universidad Central de Venezuela*, records a case of “neurosis tetanica,” or “imitative tetanus,” which occurred in a native of Caracas, a young man who had always enjoyed good health. The patient began to complain of pain in the calves of his legs which caused him considerable difficulty in walking. There was no fever, but the pain increased, and some contraction of the flexor muscles of the leg occurred, rendering the man incapable of walking. Indeed, on the second day of the attack he could not turn in bed without a good deal of pain. He was unable to sleep, and suffered from mental anxiety. It was then elicited that his brother, who lived at a little distance, was suffering from tetanus, and that the patient, who went frequently to see him, had appeared to be greatly affected at the sight of his brother’s spasmodic attacks, and had declared that he himself would die of the same malady. Dr. Guánchez, however, attributed the pains to rheumatism, which was common enough at the season when this occurred. He treated the man with anodyne liniments and jaborandi internally. No effect was produced, as

intense rigidity of the legs, simulating ankylosis, came on, the patient obtaining no sleep whatever and the pain being still very severe. A purgative was prescribed, but the trunk muscles became affected, and clonic spasms began to show themselves. Bromide, chloral, narcein, and codeia were prescribed, but none of these arrested the rapid progress of the affection. The convulsions increased, opisthotonos and lastly trismus occurred, and the man died on the sixth day. In this case the mode of invasion was different from that usual in true tetanus, which commences by affecting the muscles of the face and chest; again, there were no remissions, as in ordinary tetanus, but the disease progressed steadily and more rapidly than is usual in tetanus. As to treatment, Dr. Guáñez, who has had some experience of ordinary tetanus, has found mercury and opium sometimes successful, and in one notable case the cure appeared to be due to the constant and careful administration of curare.

Spinal Irritation is in many of its features closely allied to nervous miniery; the highly perturbed and exhausted state of the nerve cells, in various parts of the spinal cord, gives rise to many symptoms of a painful and alarming character, which frequently closely resemble serious disease of the cord, and may eventually pass into it. In the earliest stage of spinal irritation, there is diffused tenderness over the surface of the body, and considerable reflex irritability; the tenderness is so entirely superficial,

that while the slightest touch will give considerable pain, pressure is easily borne, except on the spinal column itself, where certain points will be found, pressure on which, not only gives great pain, but produces very unpleasant effects in distant organs, those, in fact, which derive their nervous supply from the affected centre pressed upon. Thus, in one patient, pressure on a point in the cervical spine, or even sudden jerking forwards of the neck, always brought on a sharp attack of vomiting. In another, deep pressure on a point in the dorsal spine was sure to be followed by severe gastric pain. Even without pressure on the spinal points, great tenderness may exist on internal surfaces in the body; in one patient a tender point over the second cervical vertebra was associated with a constant pain in the back of the throat, causing great discomfort in swallowing, and leading to the belief that an abscess was forming in the painful part—which idea was not dispelled till after treatment, directed to the painful point in the spine, entirely removed it. A tender point in the dorsal spine of another patient was a cause of extreme sensitiveness of the lining of the stomach, and intense pain after food; this also yielded to treatment directed to the tender spinal point.

Example
No. 38.

Example
No. 39.

Example
No. 40.

Example
No. 41.

Abnormal arterial throbbings, spasmodic cough, difficulty of breathing coming on in paroxysms and simulating asthma, hiccup, obstinate flatulence, irritable bladder, severe sexual disturbances, and a whole host of minor though troublesome

symptoms, frequently have their ultimate cause in some tender point in the spinal column.

Heaviness in the Loins and Limbs.—A heavy vague aching in the loins, relieved by pressure, is a constant cause of distress to many sufferers from spinal exhaustion. Exertion usually aggravates it. Pains in the feet, the heels especially, flying pains simulating the pains of ataxy, occasional aching and burning pains in various parts of the body, may be looked upon as all of a common origin in an exhausted spinal cord. The back is more frequently the seat of pain, tenderness, and general discomfort, in nervous prostration, than any other part of the body. The pains are distinct from rheumatism and neuralgia, although frequently mistaken for them; they move about from one region to another, often locating themselves for a time between the shoulder-blades; they vary in intensity and in character, sometimes dull and heavy, and sometimes more of a burning than a purely painful sensation. Closely allied to these symptoms of nervous exhaustion, are the convulsive movements during sleep, which leave the patient in the morning as unrefreshed and tired, as if sleep had been entirely absent during the night. The irritative action going on in the suffering spinal cord centres, sets up a series of muscular spasms and cramps, which afflict many persons, sleeping or waking, and produce as strong a feeling of fatigue, as prolonged exercise would induce in the healthy. In the act of yawning, patients of this class are often

Spinal
exhaustion.

Varieties
of back-
ache.

Expendi-
ture of
muscular
force dur-
ing sleep.

attacked by spasm in the muscles of the jaw, and inability to close the mouth at will.

The errors of sensation which so frequently attend these cases are numerous and sometimes alarming. One gentleman under my care recently, Example No. 42. was often seized with most disagreeable tingling in the scalp, extending over the forehead and along the nose, and continuing without abatement for hours. Another was constantly annoyed by Example No. 43. a similar tingling, over the whole of the body and limbs, whenever he undressed. Another Example No. 44. suffered much inconvenience from a large patch of tenderness, varied by a burning sensation, under the left shoulder-blade. Tenderness of the nails, especially of the fingers, numbness in the soles of the feet, and a sensation as if treading on some woolly substance when walking, are not uncommon troubles in spinal irritation. In fact, the vagaries of sensation in the highly neurasthenic are almost beyond the possibility of enumeration.

Contraction of Voluntary Muscles, lasting for weeks, or even months, is not uncommonly associated with spinal irritation. An arm or leg, or all the limbs, may be affected at the same time. A very troublesome form of wry-neck is produced by contraction of the muscles of the neck.

Temporary Paralysis of the Bladder alone, or associated with partial paralysis of the lower limbs, does occasionally occur in spinal exhaustion. A young gentleman, aged nineteen years,

Example
No. 45.

of delicate constitution, without any previous warning found it impossible to relieve the bladder, although urgently requiring to do so; in this condition he had a severe rigor, followed by incomplete paralysis of the lower limbs. When he attempted to walk he tottered, and required support to keep him from falling; even with this he moved with difficulty, in a stooping posture. The paralysis of the bladder remained, and continued so for sixteen days. His heart's action was slower than natural, the temperature of the body under the normal standard, and the pulse fell from 74 to 60. Examination of the spine disclosed two well-marked tender spots in the lower dorsal region, which was satisfactory to ascertain, as it fully disclosed the nature of the seizure, and indicated the appropriate treatment, which eventually restored him to health. In the second case, a young gentleman retired to rest apparently in fair health, but awoke in the middle of the night in severe pain in the lower part of the dorsal spine, accompanied by inability to pass water. Both these symptoms continued for some days, and then subsided under treatment.

Example
No. 46.

Hysterical Paralysis of the Bladder is somewhat common in nervous and hysterical young women: it is occasionally very stubborn, and difficult to remove.

The Condition of the Urine in Nervous Exhaustion.—There are few things, connected with the functions of the body, so little understood, and so

constantly dwelt upon, by the neurasthénic as the state of the urine; and consequently it has always been a powerful instrument, in the hands of the quack, in his dealings with his natural prey. The heavy deposits so frequently noticed in the urine are common to all slight derangements of health; checked perspiration, dyspepsia, rheumatism, acidity, errors in diet, &c. &c., produce them, but they have no direct connection with nervous exhaustion, although they may be associated with it as evidence of a general lack of tone.

Heavy deposits not necessarily important.

As phosphorus is absolutely essential for the growth and nutrition of the tissues, especially the brain and nerve substance, the presence of it in undue quantities in the urine of a nervous patient is important, and treatment for its arrest absolutely necessary; still, highly perturbed and exhausted states of the great nervous centres do frequently exist without any notable addition of this element to the urine. The elimination of phosphoric acid in excessive quantities produces very distressing constitutional symptoms; these are more or less characterised by great nervous irritability, derangements of digestion, great emaciation, severe aching pains in the back and loins, especially affecting the pelvic viscera. The urine is copious, of medium specific gravity, either acid and clear, or more frequently alkaline and whey-coloured, from the quantity of phosphates deposited in it. As the disease advances, symptoms analogous to diabetes make their appear-

Phosphates in urine.

Phosphatic diabetes.

ance; in fact, the disease merges so nearly into that condition, it has been proposed to give it the distinctive title of "phosphatic diabetes."*

Oxaluria. In the overworked and harassed, a condition of urine frequently may be found to which the term oxaluria is applied. Here oxalate of lime exists often in considerable quantities.

Difference
in the
symptoms
of lithæ-
mia and
oxaluria.

In the pampered and highly fed nervous patient, as distinguished from the opposite, considerable quantities of uric acid, much beyond the normal amount, are often excreted. To this state the term lithæmia has been applied. In such cases a feeling of oppression, weariness, aching of the limbs, and insupportable sleepiness after meals, usually exists; while the sufferer from oxaluria is refreshed and relieved for the time by food.

The urine
associated
with flatu-
lent dys-
pepsia.

Where there is much flatulent dyspepsia present, with nervous exhaustion, the urine will be found either alkaline or neutral.

In treating cases of nervous exhaustion, it is important to ascertain from time to time the condition of the urine; a knowledge of its state not only gives a clue to many obscure symptoms, but also furnishes a valuable means of testing how far treatment is asserting its influence over the disease. There should be nothing in these examinations to lead the patient to think the presence of the deposits just described jeopardises life: they do nothing of the sort, but they certainly indicate a condition which must be removed

* Ralfe on Morbid Urines.

before health can be established. As to the presence of spermatozoa in the urine, the great bugbear to many nervous persons, no doubt they are occasionally to be found, under very exceptional circumstances, but only very occasionally; and even when found, their presence is not of that overwhelming importance the designing charlatan would lead his victim to believe.

The presence of Albumen, leading to the suspicion of Bright's disease, may occasionally be detected in the urine of the highly nervous. The albumen may be in appreciable quantity, and yet disappear entirely under treatment directed to improved nutrition. In a lady recently under treatment, highly nervous and anæmic, and subject to a slight form of *pctit mal*, albumen was constant in the urine, but without casts. As the constitutional symptoms were subdued and the quality of the blood and the general nutrition improved, the albumen lessened in quantity and finally disappeared.

Example
No. 47.

Exciting Causes of Nervousness in the Male.—In hereditary nervousness, the condition of the sexual system may be both a cause and consequence of a highly perturbed and exhausted state. Complications of this nature are often a source of much trouble and embarrassment in treatment. The nervous patient is too much given to dwell on symptoms, which, distressing as they are to him, are still within the powers of judicious treatment to remove; when his attention becomes fixed, as it often does, upon these,

an amount of mental depression and general disturbance is created, which materially interferes with the steps taken to restore him to health. Nocturnal discharges, irritable prostate, impotence, physical or psychical, and all the minor troubles of the same class, are remediable when fairly dealt with, and while their importance as factors in the production and continuation of severe perturbations cannot be overlooked, nor the necessity for their removal underrated, much mischief will accrue, if undue prominence is given to them. Undoubtedly many of the forms of severe nervous prostration, already described, bear a close relation to morbid conditions of the genitals; conditions, unhappily, too often self-induced. When such has been the case, with highly sensitive individuals, the physical sufferings are much increased by the mental condition, the mind is filled with gloomy anticipations and unavailing regrets, self-respect is lost, and life itself becomes a weary burden. Before the patient arrives at this stage, or consults a legitimate practitioner, he has usually run the gauntlet of the ignorant and designing, and, in addition, had his mind filled with the popular and panic-producing literature, specially composed for his use. The pernicious influences to which he has been subjected in this way, add greatly to the difficulties of treatment; still, they are not insurmountable, and the physician can honestly promise good results, by fair and judicious means. In fact, an extensive experience of profound nervous-

ness in patients of this class convinces me that in no instance is it irremediable.*

Exciting Causes of Nervous Prostration in the Female.—Derangements and displacements in the sexual organs, in women, most materially influence the state of their nervous systems. Ovarian irritation, malposition of the uterus, and subacute or chronic inflammation of that organ, are each, in its degree, very liable to set up reflex excitement in the nervous centres from which they derive their nervous supply, and attention must be directed to this fact in prolonged and apparently intractable cases of great nervous irritability.

Exciting Causes of Severe Nervous Disturbances common to both Sexes.—"In the stir and tumult which pervade the organism when puberty arrives, especially in the enormous diversion of its nutritive and formative energy to the evolution of the generative organs, and the correlative sexual instincts, the delicate apparatus of the nervous system is apt to be overwhelmed, or left behind, in the race of development. Under these circumstances the tendency to nervous affections, where a family history of such exists, is sure to make itself felt. If, unfortunately, the habits of the in-

* The hyperæmic and chronically inflamed state of the prostatic urethra, so frequently associated with sexual excess, induces a highly exalted reflex excitability and extreme nervousness.

In consequence of this, we very frequently find in men, phenomena, which usually appear only in intensely hysterical women.—Utzman on Neuroses, &c. Vienna, 1889.

dividual are such as, under any conditions, would injuriously affect the nervous system, the chances of very serious disturbances are infinitely increased.

“ It is somewhat strange, that while we accept, as a matter of course, that sudden emotional shock may produce almost any variety of nervous disorder, the slower but far surer influence of long-continued mental habit is often practically ignored. We do not appreciate the tendency of certain unfortunate mental surroundings, and modes of mental life, to produce a generally neurotic condition, which may express itself in a variety of functional disorders.

“ There can be no doubt, that next to the influence of neurotic inheritance, the most powerful factor in the production of a nervous constitution is, not a neglected, but an unwise education. There are certain emotional, and spiritual, and intellectual grooves, into which it is only too easy to direct the minds of young persons, and which conduct them too often to a condition of general nervous weakness and susceptibility. There can be no doubt that of intellectual work, that sort which exhausts and harasses the nervous system is the forced, the premature, and the unreal, and this it is which causes the breakdown so often seen in many promising young persons. A most unfortunate, and positively poisonous influence upon the nervous system, especially in youth, is the direct result of efforts, dictated often by the highest motives, to train the emotions

and aspirations to a high ideal, especially a religious one. It is not the object which is bad, but the machinery employed. That kind of education which deliberately dwarfs the nervous energy, with the hope of preserving the mind from the contamination of unbelief and of simple passion, destroys all self-reliance, and too frequently induces the tendency to general nervous and mental enfeeblement. On the other hand, the system which seeks to purify and exalt the mind, not by enforcing obedience to a series of spiritual rules, for which another mind is responsible, but by compelling it to a perpetual introspection, directed to the object of discovering whether it comes up to a self-erected spiritual standard, is equally mischievous. It must be understood, there is no intention in these remarks to depreciate either a true and manly self-restraint, in obedience to the direction of 'pastors and masters,' or an honest watchfulness over one's own conduct and thoughts. But the lessons which our psychologists are rapidly learning, as to the evil effects upon the brain of an education that promotes self-consciousness, are sorely needed to be applied to the pathology of nervous diseases generally. Common sense and common humanity, when united with the physician's knowledge, cry out against the system, under which religious parents and teachers subject the feeble and highly mobile nervous systems of the young, to the tremendous strain of spiritual self-questioning, upon the most momentous topic. More especially, is such a practice

to be condemned, in the case of boys and girls who are passing through the terrible ordeal of sexual development ; an epoch which, as we have already seen, is peculiarly favourable to the formation of the neurotic habit, and there can be no doubt that among the seriously minded middle classes of this country, more especially those whose lives are necessarily colourless and monotonous, the mischief thus worked is both grave and widely spread.

“ Perhaps the maximum of damage that can be inflicted through the mind, upon the sensory nervous centres is effected when, to the kind of self-consciousness that is generated by an excessive spiritual introspection, there is added the incessant toil of a life spent in sedentary brain work, and chequered with many anxieties and many griefs which strike through the affections.” *

Nervous Exhaustion from Chronic Alcoholism.— There is no form of nervous exhaustion more severe in its character, than that which is induced by the abuse of stimulants. And most unfortunately, cerebral exhaustion frequently induces in the sufferer, almost from its invasion, a craving for them. A sudden and violent fit of drinking, of course shakes the nervous system very much, and, if frequently repeated, reduces the nervous power materially ; but, bad as these effects are,

* *Vide* “Neuralgia and its Counterfeits,” by the late Dr. Anstie.

they are slight compared with the profoundly exhausted state, of both the cerebro-spinal and sympathetic systems, which the continuous use of stimulants, in excessive quantities produces.

The state of constitution produced, by the constant and too free use of alcohol and its compounds, to which the term chronic alcoholism is given, in contradistinction to the effects of a transient fit of drunkenness, is due to the change produced in the nervous centres and nerves, by the blood supplied to them, being highly charged with a powerful narcotic poison, which has the twofold action, of not only rendering the blood incapable of absorbing oxygen, for due nutrition of these tissues, but also of rendering the whole nervous system, incapable of receiving and transmitting impressions, or doing so only in a very imperfect manner.

The effects of chronic alcoholic poisoning, are felt not only in the nervous centres and nerves, but in most of the important organs of the body, and over the whole mucous tract of the alimentary canal from its commencement at the lip to its termination in the lower bowel.

The derangements of the digestive organs, of the liver, kidneys, bladder, &c., which usually accompany persistent dram-drinking, vary much in degree, being in a great measure dependent on the particular form of stimulant most frequently indulged in; but the exhaustion of the nervous system is not so variably affected, being pretty much the same whether the excess is committed

with one stimulant or another. Chronic alcoholism also produces a spurious form of neuralgia, quite as severe as the true type, although differing from it in many important particulars. The pains are usually felt at first in the shoulders and down the spine, and later on surrounding the limbs near the joints, especially the wrists and ankles.

Alcohol in its various forms when given medicinally, or when actually required by the overworked and exhausted individual, is a restorative stimulant which leaves no ill effects; given in small quantities at the proper time, it dispels physical and mental fatigue; the arterial system relaxed by the previous exhaustion, is brought up to its healthy degree of tonicity, and, as a consequence, nutrition is improved, and a feeling of warmth, comfort, and support is diffused over the whole body. But, on the other hand, when so potent an agent as alcohol is abused, the effects produced are most lamentable; the pulse is unnaturally rapid, the face flushed, eyes injected and watery from partial paralysis of the vasomotor nerve fibres of the fifth; and from the same condition of the spinal nerves, there is loss of muscular power in the lower limbs, and diffused numbness on the surface of the body.

Example
No. 48.

One of my patients, a married lady, after a long course of unsuspected over-stimulation, developed all at once, the most alarming symptoms of extreme nervous prostration. The cause of these was withheld, which led for a time to

complete failure in treatment, but as the symptoms became graver and more urgent, the patient at last admitted what she had frequently been taxed with—during her illness—that she had for years lived in a state of semi-intoxication never suspected by her family, who attributed her capricious temper and the oddness of many of her actions to a kind of harmless eccentricity.

Complete isolation from home and relatives, total rest, careful dieting, massage and faradisation restored her after some months to moderate health.*

The nervous symptoms produced, simulate so many other important lesions, that considerable difficulty is often experienced in arriving at a correct judgment. This is more especially the case when the physician is ignorant of the patient's previous history, although even that knowledge will not always suffice.

In treating cases of chronic alcoholism a line must be drawn, between the condition as it exists in the comparatively young, and as it may be in the elderly individual. In the former, stimulants must be interdicted *at once*; in the latter, owing to the structural changes which must be taking place, and especially to the condition of the circulation, as evidenced by a rigid state of the arteries, stimulants must still be allowed, although in greatly diminished quantities. Here

* See the Author's work, "The Drink Hunger in Women."
—H. Renshaw, Publisher, 356 Strand.

the sphygmograph becomes an invaluable assistance to us, in judging the amount of stimulants absolutely required by the system, as its pulse tracings furnish us with an unerring guide, to the state of the heart and arterial system generally.

Exophthalmic Goitre, with protruded eyeballs, violent palpitation, rapid pulse, excessive weakness, &c., &c., is a disease of the vaso-motor system of nerves, and, like hay-fever and summer catarrh, is undoubtedly of neurasthenic origin. In the many cases I have seen, there has always been a previous history of great mental strain of a depressing character, and an inherited nervous temperament. One married lady, after long-continued trouble and grave anxieties, developed all the characteristics of the disease in the most advanced stage, and continued to suffer from them for a considerable time, but eventually recovered her health as her nervous system improved and the causes of her distress of mind were removed.*

Example
No. 49.

* For treatment of *Exophthalmic Goitre*, see Appendix, p. 173.

SECTION III.

GENERAL PRINCIPLES OF TREATMENT.

IN treating a patient presenting the leading features of nervous exhaustion, care must be taken to determine that no serious brain or spinal mischief is present, as the early stages of many grave cerebro-spinal diseases present the same characteristics. Caution.

As an exhausted, unstable, or dulled state of one or more of the great centres, on which the due supply of nervous force depends, is the cause of all the ailments we have had under consideration, it naturally follows, that the only treatment which can remove them must be alterative, restorative, tonic, and nutritive. The means best calculated to produce these results are to be found, first, in diet and regimen; next, in direct appeal through certain points on the surface of the body, to the suffering centres themselves; and finally, by the employment, through the digestive organs, of such internal remedies as will, where required, improve the quality of the blood, and, by the agency of the circulation, carry to the exhausted nerve-cells the appropriate remedies. Means to be employed.

In treating nervous exhaustion, no definite

Each case must be treated on its own merits.

plan, equally useful in all cases, can be laid down. As every person has a distinct individuality, and differs in a variety of ways from every other person, so will the conditions which present themselves for treatment differ; temperaments and idiosyncrasies offer insuperable obstacles to routine treatment, and consequently every case must be dealt with strictly according to its indications.

Rules to be observed.

In very many cases we are met at the outset by obstinate dyspeptic symptoms which require great care in the arrangement of diet before they can be removed. There is often, also, persistent neglect of all the ordinary rules of hygiene, which are so important to observe. In commencing to treat a case of nervous exhaustion, the physician must lay down such rules, as regards diet and habits, as the condition of his patient seems to require; to the sufferer from brain exhaustion, where the muscular system is unimpaired, active bodily exertion must form part of treatment, while in great muscular exhaustion, rest for the body must be enjoined, while the mind may be pleasantly and profitably amused and employed.

Sleeplessness must be combated by hygienic means, if possible. When it arises from worry or flatus, cold compresses round the waist and abdomen, and large sinapisms to the abdomen, will be found very beneficial.

Delicate nervous woman.

The delicate nervous woman, whose ailments may be mimetic in a greater or less degree, and whose condition is likely to be greatly aggra-

vated by the injudicious sympathies of unreasoning and unwise friends and attendants, must be separated from the unhealthy influences thus produced and perpetuated, as a primary step towards recovery.

In the great nervous centres and in the nerves themselves, there must be at all times a fair balance between work and nourishment; where this balance has been lost, its restoration can be brought about only by concentrating on the faulty tissues, all the nutrient and tonic influences which can affect them beneficially. These influences are not to be confined to food and medicine alone; they must embrace the wide field of hygiene, and include all the benefits which can be obtained from cheerful change, exercise without fatigue, air, light, pleasing society, diversion of mind, and rest from harassing work or duty.

Very mild muscular exertion, sea-bathing when obtainable, gentle horse-exercise, and all the amusements and light and interesting occupations, which can be pursued without mental or bodily weariness, are very beneficial, but fatigue should in all instances be carefully avoided. To these must be added the internal remedies, which the symptoms indicate, and which experience of similar cases leads us to hope, will be of material benefit in improving the quality of the blood, and through it restoring the healthy condition of the nerve-tissues.

The pulse of the neurasthenic merits attention in treatment. When much exhaustion is present

Balance between work and nourishment.

Hygienic means.

The nervous pulse

it is very quick and "empty," showing defective muscular action in the heart, consequent on the insufficient supply of nerve force to that organ. As the patient improves the character of the beat alters, gradually becoming slower and fuller until it finally reaches a healthy standard.

Morbid
defective
blood.

The functional nervous affections depending on morbid conditions of the blood, or the presence of poisons in it, must be dealt with in the first instance, in the same manner as the diseases already noticed, but in addition attention must be given, to the removal of the particular poison or morbid condition present. Rheumatism, gout, diphtheria, the exanthemata, syphilis, malaria, lead and mercury, are all exciting causes; each in a manner peculiar to itself, affects the nervous systems through the blood, and must all be dealt with and eliminated in the usual way, if we hope to effect a cure, while attention is being given to the nutrition of the poisoned nervous centres.

In defective states of blood, as anæmia, chlorosis, &c., food is often preferable to physic, and it is a matter of congratulation, to find that the immense value of hygienic means in improving the condition of the blood, and through it of the great organic functions, is beginning to be as well understood by the body of the profession, as it long has been by the distinguished chiefs of it.

selection
remedies

The value, however, of the usual remedial agents must not be overlooked, in dealing with these conditions; that mode of treatment which

aims at furnishing to the blood, substances in which there is deficiency in quantity, either in the fluid itself or in the nerve-tissues, will not usually be attended with success. The power of assimilation being impaired, efforts must be directed to its restoration, and to the direct improvement in the nutrition of the nervous centres.

The selection of remedies, therefore, must be quite independent of the idea of chemical supply, and must be guided by the principle of improved nutrition.

The condition of the urine in the neurasthenic, State of urine. is of the first importance. In the earliest stages of the disease, the patient usually voids it in larger quantities than usual, and of an exceedingly low density. The evacuation is often followed by great exhaustion, not to be accounted for by the mere loss of quantity, but evidently the consequence of expended nerve force.

Further on, when detrition of brain or nerve tissue is taking place, the urine indicates it by the presence of alkaline phosphates in excess, the amount of which should be carefully estimated from time to time, while other changes occur in its composition, as secondary assimilation becomes more and more defective. In cases of dyspepsia and overwork, deposits of earthy phosphates are often found; careful attention, therefore, to the condition of the urine is essential in all these cases, not only to guide us at the commencement, of treatment, as to whether the disease may have only reached the stage of molecular perturbation,

as evidenced by the low specific gravity of the fluid, or passed into the graver state of waste and disintegration, the detritus of which will be found in the larger amount of solids present in it. These examinations as treatment progresses, afford most valuable information, not only as guides in our selection of remedies, but as sure indications of the progress we may be making towards restoration to health. Conditions of urine, analogous to what are found in the rheumatic constitution, are not uncommon in nervous patients, and it is important to know, when lithiasis or oxaluria is present, whether it is strictly the result of mal-assimilation from loss of nerve force, or is complicated with a latent gouty or rheumatic taint.

Many patients in a high state of nervous perturbation, void large quantities of urine, and in consequence fancy themselves sufferers from diabetes. The inordinate flow, however, subsides as health improves.

Mineral poisons which have produced functional derangement of nerves—such as lead and mercury—must be eliminated from the system. This must be done by careful employment of iodide of potass, which will not fail in judicious hands to quickly effect this object.*

Syphilis. As regards the poison of syphilis, it is most

* *Vide* Melsen's Paper in "Journal de Chimie Médicale," and W. Budd's Paper in "British and Foreign Medico-Chirurgical Review."

essential to destroy it, so many of the gravest nervous diseases depending on its presence; here also, iodide of potass may be employed with every prospect of success, and the practitioner must measure the dose by its effects, and not scruple to prescribe it freely.

In dealing with the children of neurasthenic parents, in whom it will be most desirable to alter, as far as possible, the inherited susceptibilities, too much care and attention cannot be given to their diet, habits, and surroundings. The rapid and incessant additions to the tissues, which are taking place during the growth of children and young persons, imperatively demand as much food as the digestive organs can dispose of, without being overburdened, and this food should contain all the important elements, which the continuous process of development is building up the frame with. Coupled with food, fresh air takes the next important position, and to it we may add the bath, moderate gymnastic exercise, and *light* studies, enough to employ the mind without fatigue. The processes of cramming the mind of the young while the brain is rapidly developing, and forcing forward to unhealthy maturity, faculties which require time for their natural and just development, is fraught with deadly evil to the nervous child, and with serious mischief to the healthiest. By it not only is there exhaustive expenditure of nerve power, but secondary irritation of the most important centres of nervous force (as the medulla oblongata),

Offspring
of nervous
parents.

already weak in their powers of vital resistance.*

As puberty is approached, the rapid evolution of the organs of sex, creates a severe tax on the nervous centres and their dependencies. At this critical period of life, in both sexes, while nutrition is still of immense importance, anxious attention must be given to moral means of treatment. The imagination must be allowed to slumber, if possible, and to this end a *serious aim* must be given to the daily occupations, and any kind of work, either mental or physical, which is not fatiguing or exciting, should be provided for them, and every means employed to interest them in it, and, if possible, induce them to take a pride and pleasure in the pursuit. Action, no matter what kind, so long as it does not exhaust or disgust, will at this period of the bodily growth prevent nervous disturbances, if they have not already manifested themselves, and certainly check them if they have.†

This law of serious employment, holds good through all functional nervous affections; in hypochondria, hysteria, chorea, epilepsy, it will be found that great benefit can be derived by occupying actively, the mental and physical powers of the sufferer, so long as such occupation has a real purpose in it, and does not partake of

* *Vide* "Neuralgia," by Dr. Anstie. Macmillan, 1871.

† *Vide* "Des Fonctions et des Maladies Nerveuses," by Dr. Cerise. Paris.

Serious
employ-
ment
essential.

the character of amusement alone. In the same connection I can fully bear out the remarks of Dr. Brown-Séquard: "How often have I not seen young epileptics kept in idleness (alas! by medical advice), and having gained more or less of the vices it leads to, improve rapidly from having their minds occupied at regular hours, in nearly the same way as healthy people of their age."

Brown-Séquard's opinion.

An unsocial solitary life in the individual who has just passed the period of puberty, leading as it often does to solitary vicious habits, should be exchanged for one of action and sociability; and emotional excitements, especially such as encourage gloomy religious views in the young, should be avoided at this period of life, when the rapid evolution of the sexual organs and feelings, creates constant demands on the nutritive system and on the nervous centres, and when the judgment is not sufficiently matured, to help the mind to just conclusions. Mis-directed mental emotions, joined to the irritation of a quickly developing sexual apparatus, have made a wreck of many promising persons of both sexes, and this almost as frequently amongst those who have no hereditary tendency to nervous diseases.*

To those of maturer age, who pass their lives in the perpetual harass and strain of mental labour *against time*, a seasonable word may be

Caution to the mature.

* Anstie, op. cit.

said by the physician. Like every one else, they accept as a truism the effect of sudden shock producing severe mental or nervous disorder; but let them reflect that as the continuous drip of a few atoms of water on the hardest stone, will eventually wear it away, so will the slow but sure influence of long-continued mental *fag*, prematurely wear away the nervous tissues, and produce all forms of neurotic diseases, including cerebral softening itself. And this is the class with whom the neurasthenic constitution originates, to be left as a legacy to their children and their children's children.

Expendi-
ture of
nervous
force.

As every effort of the mind, and every action of the body, involves the necessity for a discharge of nervous force, much as a Leyden jar discharges its charge of electricity, and as every continuous exercise of the faculties, requires a continuous succession of such discharges, it follows that as the generation of nerve force, is produced by the act of nutrition (that is to say, that the establishment of a nutritive molecule and removal of an effete one sets free a modicum of electricity, which joining others supplies the current), such process must keep pace with the discharges, hence prolonged exertion of any kind requires extra nourishment; but such prolonged exertion must be kept within certain bounds, for when it becomes excessive in its expenditure of vital force, the powers of assimilation are enfeebled, and as imperfect assimilation results in insufficient nervous supply, the vicious reaction

is mutual, both nutrition and nerve force being injured. It has been forcibly and truly remarked by Professor Laycock that much more force, as motion, is used in mental than in bodily activity in the same time, and that the potential energy of the brain is the greatest of all kinds of vital energy, and requires a larger supply of blood to maintain it.*

When the laborious brain-worker, be his calling what it may, begins to have sleepless nights or a disrelish for his food, and to experience the discomforts of dyspepsia, he may take it as a warning that the early symptoms of insufficient nerve force, and molecular perturbations in some of his nervous centres, are manifesting themselves, and that he is drifting into a condition which will undermine his mental and bodily powers, unless he turns the warning to good account. Persons passing into this state are usually prone to seek for restoration in prolonged muscular exertion, in the hope of walking off their ailments, and lengthy walking tours in the Highlands, Wales, or Switzerland, are eagerly undertaken with this view. This is a grave error, against which the physician should raise a warning voice; many are beaten down beyond all power of recovery by such a course, while in others recovery is very materially retarded. Rest and agreeable change for the

Earliest
symptoms
of failing
nerve
force.

* *Vide* Address before the British Medical Association at Newcastle, 1869.

mind, and nutrition for the tissues, especially the nervous ones, are essential to recovery, and these are best attained by the brain-worker, by quiet, very moderate exercise, careful but generous diet, cheerful companionship, and occasional change of scene; and the longer the time which elapses before he avails himself of this advice, the nearer does he approach degeneration of his minute nervous structures, and the more difficult, tedious, and uncertain will his ultimate recovery be.

Fatty food
essential.

As regards the quality of his food, the nervous sufferer should consume as much fat-forming material as his digestion will permit.* The universal presence of fat, where force is manifested, and the large amount of force its oxidation can produce, point to its employment in exhausting diseases. Fat is a most important constituent of brain and nerve substance, but the fear of becoming "*bilious*" deters many patients of the class under consideration, from admitting it into their dietaries. This is a great mistake, for properly proportioned in the food it is easy of digestion, and being a direct nutrient of the exhausted tissues, supplies to them the element in which they stand in need. Cocoa, from the large quantity of fat and albuminoid substances contained in it, is very useful in weak states of the system; arrowroot and other starches, sugar,

* See further on this advice "The Weir-Mitchell Treatment" at page 119

when oxalates are not present in the urine, butter, cream, salad oil, &c., should enter largely into the dietary ; as fat-forming food, where the stomach cannot tolerate these at first, extract of malt may be given with advantage, also grapes and many of the sweeter fruits. These all contain a store of latent energy, capable of manifesting itself in the body under the form of heat, electricity, formative force, or whatever other terms we may apply to the essentials of healthy life. Where muscular tissue is defective, eggs and rice are important articles of food—an average-sized egg contains 10 grs. of nitrogen, while 1 lb. of rice averages about 50 grs. of the same element, the essential of healthy muscle.

Among vegetables, sea-kale holds a high place as a special nutrient of brain tissue, and the marine plant called laver, properly cooked, ranks high in the same class. While a fair amount of animal food should be consumed daily, fish (especially sea) should not be neglected, as they contain important and requisite elements. In short, while the stomach should not be overloaded, nor the powers of digestion overtaxed, a large amount of generous food ought to be consumed daily.

The question of stimulants in nervous diseases Stimulants. requires some consideration ; there is no doubt, an ounce of good French brandy in a cup of new milk, taken two hours before bedtime, will often relieve the restlessness of the exhausted nervous system, and induce sleep ; still, unless

under good advice, it is a practice to be pursued with much caution, more especially as it may be attended with other drawbacks, and there are many other remedies which will produce the same good effects without any evil consequences. Alcohol has a special and peculiar affinity for brain and nerve tissues ; it enters into temporary combinations with their structure, and in excess interferes most seriously, while the combinations last, with the generation and transmission of nerve currents, as evidenced by the impairment of special senses, and the more or less suspension of voluntary muscular power ;* still, it has been proved by experiment that in very moderate doses, it increases the secretion of gastric juice—an important fact for nervous dyspeptics ; so within certain limits its effects are beneficial, and its employment is frequently necessary in conditions of extreme nervous prostration, where digestion is feeble. It should not be flown to, however, on every slight occasion, but taken with discretion, and except under very pressing circumstances, always with food.

Beer in its degree has the same effect upon the nervous system that alcohol has, and may be taken with the same reservation ; in excess it is more exhausting and depressing, in consequence of the large quantity of the salts of potash contained in it.† Amongst wines, claret and

* Parkes, "On Hygiene."

† Ranke, "Phys. de Menchen," 1860, p. 139.

burgundy, when they do not constipate, are excellent additions, in moderation, to the dietary of the nervous. The best rule for guidance in the use of stimulants appears, from my experience, to be this: Take them in very moderate quantities, with food only, and lessen or discontinue their use if they produce headache, flushings of the face, dryness of the tongue or throat, or any other unpleasant effect.

Tobacco, if indulged in at all, should be used, Tobacco. with great moderation by the neurasthenic; in excess it produces much restlessness at night, with disagreeable dreams, lessens the appetite and digestive powers, and enfeebles both mind and body. According to the experiments of Kölliker, it has a paralysing effect on the brain and the nerves of voluntary motion, while it excites the medulla oblongata and the spinal cord—morbid effects to be avoided by the sufferer from nervous exhaustion. For all these effects from abuse of tobacco, I would not counsel its withdrawal from the very moderate smoker (no bad effects from the habit being appreciable), if he confined himself to a small quantity of a very light and delicate quality.

A sluggish state of the bowels, with a scnsa- Purgatives. tion of weight and discomfort, is a very common symptom in nervous diseases, tempting the patient to fly to purgatives and stomachics for relief. This practice is to be avoided: the inertia of the alimentary canal is the consequence of diminished energy in its nervous supply, and upon this con-

dition purgatives have the effect of still further increasing the evil. Many cases of this class, progressing steadily towards recovery, have been thrown back into the old state of exhaustion by the indiscreet employment of a purgative. The nervous of both sexes often experience a considerable amount of energy while the bowels are quiescent, and lose it after an evacuation. This is due to the sudden withdrawal of moderate pressure from the abdominal sympathetics, and disturbance of the vaso-motor nerves, rather than expenditure of nervous force by the act of expulsion.

Cold ex-
tremities.

Persons of nervous temperament usually suffer much from cold extremities : these should be kept warm and dry at all times, and the capillary circulation promoted by minute doses of strychnia, if necessary. The condition of the skin should receive attention ; a good and regular action on the surface of the body not only assists in giving a general tone to the system, but has a most soothing and calming, not to say sustaining, effect upon the weak and irritable nerves of the neurasthenic.

Effects of
sexual ex-
citement.

Sexual excitement has a most pernicious influence upon persons suffering from nervous exhaustion, and should be studiously avoided. The effect of indulgence, even of the most trivial kind, will often bring on an amount of nervous perturbation and malaise quite out of proportion to the momentary exaltation. Singular to say, these disagreeable sensations rarely immediately

follow the act, but usually make their appearance the following day, and sometimes continue for days and weeks afterwards. In one case under my notice, the patient always experienced on the following and many succeeding days, a most disagreeable feeling of diffused neuralgia, over the whole posterior surface of the body, from the heels to the back of the head. In another, increased despondency and gloom, irritability of temper and moroseness, with a desire to shut himself up from all society, invariably came on the day following the act, and continued for more than a week afterwards, leaving the patient in a very nervous and exhausted state.

In closing these observations on the general effects of nervous exhaustion, it may be remarked that the physician is always justified, when no actual structural lesion exists, in assuring his patient he can be entirely restored to mental and physical health, if he will only persistently follow the treatment, based on the general principles here laid down.

I would also remind the young practitioner, that his manner to his neurasthenic patient, may be one of his most potent remedies. Without denying the gravity of the ailment, or the wretchedness it brings with it, he may by his cheerful demeanour, as well as by his positive assurances of ultimate recovery (always to be made within the bounds of truth and candour), comfort and sustain with more permanent effect, than could be produced by the most powerful

tonics. In no class of diseases is this so much a necessity as in the one under consideration, for the neurasthenic have a strong tendency to place more reliance on empiric, than true professional advice. They will often take the most absurd remedies from any old woman, or charlatan, or friend met at haphazard at the club or in the street; while they will at the same time, perhaps, be moving from one physician to another, taking the opinions of all, but following the advice of none. There are, of course, many exceptions to this; but the prevailing mental bias of the highly nervous is in this direction, and when present cannot be too highly reprehended. To such, infinite mischief accrues—opportunity of early recovery is lost, conditions easily removable by judicious management at the outset, are allowed to remain, until they become permanent and pass from mere aberration of nervous force, into degeneration of tissue. It cannot be impressed too forcibly on the minds of this unhappy class, that changing from treatment to treatment is always commencing but never progressing, and by such a course, the work of restoration can never be perfected.

In the treatment of diseases arising from nervous exhaustion, it is peculiarly desirable that the physician should give his attention to the special action of remedies. Great progress has been made of late years in the cure of functional nervous diseases, not so much by the discovery of new remedies, as by the more appro-

priate method of applying those already well known. Research and repeated experiments, have taught us that nervous centres and nerves, and in some instances different portions of the same nerve, are influenced most profoundly by certain remedies, while no effect whatever is produced by the same remedies on other nerves and nerve-centres which, from their anatomical and physiological relations, would appear to be open to the same influences.

The medicincs which exercise the greatest amount of restorative influence upon the nervous centres, are those which act directly on their blood-vessels, and those also which furnish directly and indirectly defective elements; of these the principal are the metals, phosphorus and its compounds, strychnia, the mineral acids, and quinine. Some of these have a special influence on particular parts of the nervous system; as, for example, phosphorus and its compounds, on the cerebro-spinal substance; arsenic on the pneumogastric nerve at its origin in the brain, and along its whole course; zinc, strychnia, silver, &c., on the spinal cord; while others, as iron, exercise a peculiar influence on the transformation of food into blood, and facilitate its conversion into brain and nerve tissue. Many of these remedies produce better effects in combination, over certain conditions of the nervous centres, than when employed separately; some becoming the most powerful restorers of exhausted nerve-tissue, even when at the verge of degeneration. Strychnia

Restora-
tive medi-
cincs.

increases the reflex faculty of the nervous centres, and acts on the sympathetic system, and through it on the stomach, bowels, uterus, and male genitals, but these qualities are more valuable when supplemented by others than when exhibited alone. It also requires special notice for its extraordinary influence over the severe and alarming visceralgiæ, especially gastralgia, on which its effects are often immediate and permanent.

Arsenic requires a special notice also, from its singularly happy combination of powers; it improves the quality and enriches the blood, a matter of vital importance in nervous diseases, and it acts as a special and healthy stimulant of the nervous system; as an anti-periodic it is peculiarly useful in those severe neuralgias which come on at fixed intervals. In true angina pectoris, where no organic lesion exists, it may be said to be specific, through its influence on the pneumogastric; and for the same reason, in the early stages of diabetes it has been employed with considerable benefit.

Zinc, especially the valerianate, ranks high as a nervine tonic, and in judicious combination is one of the best remedies, in the early stages of nervous exhaustion, especially where there is much restlessness, depression of spirits, and fluttering at the heart.

In addition to nerve alteratives and tonics, whatever tends to increase the fatty and albuminoid materials in the system, is worthy of attention in the treatment of these diseases. The

Cod-liver
oil and
albumi-
noids.

peculiar forces of the body are mainly derived from the fats we consume. Cod-liver oil takes the first place in remedies of this class, and after it extract of malt. In all instances where the oil cannot be tolerated by a weak digestion, from 10 to 15 minims of ether combined with each dose will overcome the nausea and distaste, and increase the appetite and nutrition. Extract of malt may be employed with advantage, and if combined with quinine, it has a most restorative influence on constitutions in which the white corpuscles of the blood predominate over the red, as quinine arrests the amoeboid movements the white corpuscles perform, and checks their development and multiplication in the lymphatic and vascular glands.

As a highly valuable remedial agent, the bath Baths. may be noticed here. Properly employed it is a very powerful tonic, more especially if of sea-water, as tissue metamorphosis goes on more energetically under its influence, than if ordinary water is employed; construction being in excess of destruction, exhaustion from deficient nutrition is overcome, and the patient is helped forward towards restoration. Where sea-water is not obtainable, plain water may be used with considerable though diminished advantage. In all instances, the temperature of the water and the duration of the bath, must be carefully apportioned to the strength of the patient; it must be discontinued before depression sets in, and while the greatest amount of nutritive vigour is in

operation, as evidenced by the warmth and glow on the surface of the body, and the mental buoyancy and exhilaration experienced when the good effects are at their height. To the individual in vigorous health, the bath may be taken without any ill effects on rising, but to the exhausted this period is objectionable: the body after the prolonged fast of the night requires nourishment, and is incapable of that vigorous reaction which is the essential of beneficial bathing. The best period of the day, for the invalid to take a bath, is about three hours after breakfast: at that time, the process of digestion is too far advanced, to be retarded or embarrassed by any sudden application to the surface of the body, while the system generally, is sufficiently refreshed to bear the incidental fatigue, and to assert its powers by pleasurable and healthy reaction.

An agreeable addition to the bath, and an excellent substitute for sea-water, may be made by dissolving one pound of common rock salt in boiling water, and adding the solution to the bath. It is better to dissolve the salt some hours before it is wanted, to allow the impurities to subside, and the clear liquor only to be used.

As the patient improves in nervous force, and consequent power of toleration, the shower bath may be substituted for the hip or plunge bath; at first the quantity of water used should not exceed four gallons, and the fall not more than eighteen inches, but as improvement

goes on, quantity and height may be increased at discretion. The shower should always be received on the shoulders, and when the circulation is feeble, the feet should be placed in hot water.

Where much spinal exhaustion exists, sponging the back on each side of the spinous processes, especially from the fifth to the eleventh dorsal vertebra, with a strong solution of acetic acid, will be found of considerable benefit: this may be done at bedtime, and the spinal douche of salt water used in the morning, with gentle friction afterwards.

An excellent method of employing the spinal douche at home, is by means of a vessel capable of holding from four to eight gallons of water, to which an india-rubber tube, of sufficient length and of the calibre of one-fourth of an inch, is attached. The vessel, charged with the quantity of water required, is placed on a bracket or other convenient stand, as high as the room will allow; the free end of the tube, with a tap and rose, similar to those on garden watering-pots, attached, can then be applied by the patient, who merely requires to turn the tap to allow the stream of water to run down his spine.

Treatment by Suspension.—The attention of the profession was first called to the treatment of locomotor ataxy and some other varieties of spinal disease by Dr. Machoukowski of Odessa in 1883, since then it has been used with considerable success in Paris and this country both in private

and hospital practice. An extended experience of its remedial effects, points to its successful employment in cases of severe nervous depression and spinal exhaustion, with or without loss of sexual power; in the latter defect it has been specially useful. How it acts on the spinal cord we are not yet in a position to say. That it has an influence and an important one, cannot be denied, but whether this is produced by a changed condition of the circulation and consequent improvement in nutrition, or by mere mechanical action on the nerve fibres, the study of the subject is not yet sufficiently advanced to determine.

The air bath.

When the season and the patient's powers admit of it, exposing the surface of the body to the free action of the atmosphere—*i.e.*, remaining naked or nearly so as circumstances will allow, for half an hour every morning on rising, is an excellent adjunct to other treatment. The air bath, as this may be termed, supplies the blood, through the absorbent power of the skin, with a larger amount of oxygen than it can otherwise obtain through the woollen and other coverings of the body. In Southern Europe the sun bath, on the same principle, is much employed; but as it cannot be put in practice in our climate, no further description of it is necessary.

The sun bath.

The Turkish bath.

Where the patient has a gouty family history, with dry skin, a somewhat gorged condition of the blood-vessels, and a considerable deposit of

lithates in the urine, the Turkish bath will assist in removing these conditions; while the process of shampooing, not only stimulates tissue metamorphoses, and improves the quality of the blood, but by its action on the peripheral nerves, distributed over the surface of the body, contributes in a not inconsiderable degree to an improvement in the nerve centres themselves.

In employing the Turkish bath, the neur- Caution.
asthenic must do so with caution, and in a manner somewhat different from the plan usually pursued. Instead of the ordinary slow heating process, gradually pushed to a point at which profuse perspiration is induced, the patient should as quickly as possible get into the hottest atmosphere he requires; this should never be much above 150° F. The moment he feels heated thoroughly he should leave, having previously brought on a gentle action of the skin with the assistance of a glass or so of water. The shampoo and spinal douche should rapidly follow, and he should pass to the cooling-room directly afterwards, remaining there only long enough to reduce the temperature somewhat, but not as low as the normal standard, for the body should still be in a glow when he passes into the outer air. It is not safe for persons suffering from nervous exhaustion to cool down, to even the healthy heat of the body, after a Turkish bath; while to induce even the slightest chilliness is highly dangerous.

Where the blood is defective, and the nervousness may depend upon, or be aggravated by, a deficiency in its red globules, a short course of chalybeate waters, at one of the more pleasantly situated spas, will be found a valuable agent in treatment. Poverty of blood always exists, when the quantity of iron in it is less than 40 grains; when it is almost entirely absent, the condition of the patient is one of utter prostration. Between these points, there are various gradations, which influence the system proportionately, and which must be removed before we can look for permanent and beneficial results. In advising a course of chalybeates, the patient must be cautioned against a too profuse employment of them. The blood will not assimilate more than its actual requirements—nor even that all at once; its quality cannot be increased beyond the standard of health, and any attempt to force it by large doses, is certain to only derange the digestive organs, and introduce a fresh embarrassment in treatment. Small doses, therefore, are from every point of view most effective; and where carbonic acid is present in the natural water, it will be found an agreeable and useful addition, as it stimulates the stomach and assists digestion.

Chalybeate waters.

Caution.

Holidays and change.

When the nervous sufferer is engaged in any occupation, which requires constant attention, or when the monotony and purposelessness of everyday existence are weary burdens, rest and change are essential to recovery. My experience is

against prolonged absences from occupation, in cases where the mind has been overworked; nor do I think long sea voyages so beneficial, as is generally believed, unless they have been preceded by a proper course of treatment. In any holiday, mountain-climbing and fatiguing walks are to be carefully avoided; the muscles, especially, in exhaustion of both brain and spine, must not be overtaxed.

To men engaged in business, short and frequent breaks in the daily toil, are much more useful in restoring and retaining health, than a long holiday once a year. I have frequent occasion to note the excellent results produced by such arrangements, when I can induce my patients to take a half holiday in the middle of the week, and a whole one on Saturdays. Short holidays.

The daily journey to business by rail, beyond twelve or fifteen miles, is highly objectionable, and even within these distances, frequent stoppages of the train, and the consequent jar of the brakes, are to be avoided. To live beyond the sphere of the vitiated air of a great city, and to sleep in a pure country atmosphere, are objects worth attaining, even when accompanied by some drawbacks, but these must not be of a kind which unduly affects the nervous system. Daily railway travelling.

In the profound nervous exhaustion, with great deficiency of will, so often met with in delicate women, whose lives are spent between bed and couch, systematised manipulation of the skin and underlying muscles, has, under the name of Massage.

massage, been much resorted to of late, and with considerable benefit to the patient.*

Influence
of electric-
ity in the
treatment
of nervous
diseases.

In addition to the remedies just treated of, electricity in its varieties of galvanism, faradism, and franklinism, may be mentioned as potent remedial agents in the successful treatment of nervous diseases. When the usual remedies fail, or when recovery is slower than might be expected, the physician should have recourse to one of these, according to the exigencies of the case.

A combination of the internal remedies indicated, and the form of electricity adapted to the patient's condition, should be employed; as by this conjoined method an earlier and more permanent recovery may be brought about; in chronic cases, which have already undergone an extensive medication without good results, electricity may be relied upon, in addition, as the only therapeutic agent which can be employed with a hope of success.

A judicious combination, under the circumstances just stated, furnishes the most reliable means, for restoring exhausted and impoverished nerve substance, and with it nerve power. This is clear, if we bear in mind the manner in which the true nerve currents are generated, the molecular arrangement of the ultimate structure of nerve tissue, and the electrical state of these molecules in health. Where

* *Vide* "The Weir Mitchell Treatment," page 119; and "Massage" in Appendix, page 172.

disease is present it can be readily understood our hopes of success must rest upon the means which will enrich the impoverished tissues, calm molecular perturbations, rectify nervous aberrations, and supply the faulty and deficient currents with increased tension and volume, until the natural and healthy ones are again set into steady and sustained action.

The application of electricity to the human body, produces special physiological phenomena, according to the kind used—its quantity, its tension, the position of the poles, and the locality and nature of the tissue where the application is made. When the current ascends, it increases excitability in a part, because it reverses the natural nerve current which flows down it; when it descends, it calms and soothes it, because it mixes with the nerve current flowing in the same direction and increases its power.* An ascending current acts most powerfully on the nerves of sensation; a descending on the nerves of motion. An ascending current increases reflex action; a descending diminishes it. An ascending current, through the spinal cord, acts upon the motor nerves by direct, not reflex action: a descending, on the contrary, acts by reflex and not direct action.

Physiological phenomena of electricity.

Electric currents have a marked effect on the blood, and on its circulation, and also powerfully influence nutrition. The very remarkable tonic

* Producing the condition termed "Electrotonos."

effects of the galvanic and faradic currents, on the living subject, are to be explained partly by the direct physical and chemical action of the electricity, and partly by the changes of tissue which accompany muscular contractions; the increase of heat produced by the latter cause, with the corresponding increased absorption of oxygen, the modifications of endosmosis and exosmosis, the changes in the form and colour of the red corpuscles of the blood, all the recognised molecular and chemical phenomena that result from electrification of the tissues, help to account for the wonderful and often rapid increase of weight, with improvement in all the vital functions, that results from a persevering use of general electrification.

Therapeutical effects.

General Effects of Electricity on the Human Body, and Differences in the Therapeutical Actions of the Galvanic and Faradic Currents.—Electricity gradually improves nutrition and restores to a healthy standard, perverted and exhausted functions; the strength already possessed by the patient is not only stimulated, and supported, but permanently increased, and as a consequence, there is a greater capacity for mental and bodily labour.

Comparison with other remedies.

On comparison with medicines it will be found to produce the leading effects of iron, quinine, phosphorus, strychnine, and the nervine and blood tonics generally.

General application.

The full effect of electricity in the body is best shown in its general application over the

whole surface ; when so applied it improves the various operations of digestion ; it also directly affects the brain and sympathetic system.

Static electricity, or franklinism, is a powerful stimulant of the sentient nerves ; in some forms of anæsthesia, it has succeeded after the constant and interrupted currents have failed. Franklinism.

The difference from a therapeutical point of view between the galvanic and faradic currents, is of considerable importance, and merits special attention. Therapeutical distinctions in the effects of galvanism and faradism.

The galvanic current has a much greater power of overcoming resistance than the faradic. It can reach deep-seated tissues, and traverse large nerve trunks and branches, and act on the brain, spinal cord, and sympathetic ganglia.

The galvanic current alone produces the phenomena of electrotonos, on which so much depends in restoring molecular equilibrium in a nerve ; it is thus superior to the faradic in the treatment of neuralgias, atrophied muscles, and rheumatic affections. Its catalytic influence over the vaso-motor system of nerves, promotes absorption, and ensures the removal into the general circulation of effusions, so that its employment is indicated in dropsy of the joints, rheumatic gout, &c. Its catalytic effects are also of service, in tremor and spasm from inflammation of the brain, and in paralysis of the bladder, rectum, and lower extremities, from inflammation of the cord. Galvanism alone produces electrotonos.

The galvanic current applied intermittently,

and by voltaic alternatives, is a powerful stimulant of all parts of the nervous system, and by its effects on the motor nerves, can frequently induce muscular contractions in paralysed limbs, when the faradic current has failed.

The galvanic current produces electrolytic, endosmotic, and thermal effects, which enable it to remove by absorption, or by the cautery, morbid growths of almost every description.

Faradism has greater influence over muscular tissue.

On the other hand, the faradic current, by its rapid interruptions, produces greater mechanical effects than the galvanic; by stimulating the muscles to contract, it promotes the oxidation of the contractile tissues, causes a freer supply of arterial blood to them, and thus induces chemical and vital changes in them, which augment their nutrition.

The faradic current induces physiological activity in impaired motor nerves and muscles, by rearranging their molecular equilibrium.

Effects upon contractile fibre-cells.

The faradic current has a more stimulating effect than the galvanic, on contractile fibre-cells; it induces in them more active tissue metamorphoses, and is therefore more useful, in diseases of organs largely supplied with these cells, as the abdominal viscera.

Faradism superior to galvanism in general electrification.

The faradic current is much superior to the galvanic in general electrification of the whole surface of the body, the peculiarly restorative and tonic effects of which depend in part on the stimulus applied to the peripheral nerves, but in a greater degree to the infinite variety of mus-

cular movements induced, by which more active oxidation of tissue is promoted and effete products removed.

In operating with either the galvanic or faradic current, on any portion of the body, the result produced will be considerably affected by the size and position of the electrodes, the method of their applications employed, and the strength. The electrodes are made of metal, which is usually covered with moistened sponge, or one of them may be in the form of a metallic brush; this last is a very painful method of application, and is to be resorted to only in cases of excessive anaesthesia, or as part of the electric moxa, in severe and stubborn neuralgias.

Results affected by size and position of electrodes.

The size and shape of the electrodes must depend on the position and nature of the parts to be operated on. Central galvanisation, as a rule, requires large well-moistened electrodes; small finely pointed ones are best adapted to local faradisation of small muscles, and somewhat larger ones for larger muscles. It must be borne in mind, that the smaller the electrode, the more painful is its application, and that where difference in size exists, the current is more sensibly felt at the smaller one, and that electrodes moistened with salt water, conduct better than where plain water is used.

When we sum up the therapeutic effects of electricity, it will be seen how specially adapted it is for all diseases, having their origin in a deranged action in, or an exhausted condition of,

the nervous centres. The effects of electricity when applied to the body, over its whole surface, may be divided into three classes; the primary or stimulating, the secondary or reactive, and the permanent or tonic.

Relief from weariness and pain is a very common primary effect, and it often occurs that even in the middle of the first application, patients who suffer indefinable nervous pains in the head, back, sides, and stomach, or experience much weakness in the limbs, are relieved. And although this effect may pass off in a few hours, the persistent repetition of the applications for a time, will make the benefit received permanent.

Persons suffering from nervous diseases are very subject to cold feet and hands, as well as creeping chills over the body; on such the effect of general electrification is very agreeable, as from its power of equalising the circulation, the temperature of the surface and extremities, is raised to a pleasant and healthy standard.

The secondary effects of general electrification are not often present: when they do occur it is only at the commencement of the treatment, and are to be ascribed chiefly to the new and alterative action upon the unaccustomed muscles. A sensation of soreness in the soft parts operated on, is the usual symptom when any are felt; but this generally passes off in a few days, and does not return after future applications.

The most important effects are, of course, the permanent ones. There is no fixed time when

these may be looked for, as it depends on the duration and nature of the disease, the constitution of the patient, and the skill and perseverance of the treatment. They may appear early in the treatment, or remain latent until all treatment is abandoned, and then advance with steady and certain progress. The following may be taken as the order in which the permanent effects usually appear :

Improvement in the Sleep.—As loss of sleep is the most constant and depressing symptom in many nervous diseases, its relief is one of the first effects of electricity appreciated by the patient. The importance of this fact can scarcely be overrated. Sleep is food for the nerves; its presence facilitates a readjustment of the molecular balance, a disturbance of which is the primary cause of the nervous exhaustion and all the conditions which follow it.

Increase of Appetite and Improvement in Digestion.—This is produced by direct action on the stomach and pneumogastric nerve, and although not so constant a result as the preceding is still sufficiently so to warrant enumeration.

Regulation of the Bowels.—Constipation sometimes yields very early in the treatment; but, as a rule, the improvement towards permanent relief keeps pace with the benefit felt in the other organs of the body.

Improvement in the Circulation.—Permanent equalisation of the circulation is a constant effect in all cases where it is defective. This is the

result of improvement in the general nutrition of the system.

Relief of Nervous and Mental Depression.—The indefinable mental distress and alarm which so often afflict the patient in hypochondriasis, hysteria, dyspepsia, and other diseases depending on nervous exhaustion, yield more surely and rapidly to general electrification than to any other course of treatment; and the remarkable ease and success with which it relieves the horrible depression of nervous invalids is sufficient to entitle it to a foremost place in medicine.

Relief of Weariness and Pain.—The indefinite, wandering sensations of uneasiness that accompany nervous exhaustion, yield quickly to the judicious application of electricity. In the severe pains of neuralgia the effects of the continuous current are very remarkable, and even in the severe lancinating pains of cancer, and other malignant diseases, the sufferings are much alleviated.

Increase in the Size and Hardness of the Muscles, and in the Weight of the Body.—Under the influence of protracted treatment, the muscles are sometimes developed in size as well as in firmness, in a manner which naturally astonishes those, who for the first time have their attention called to it. The body also may increase somewhat in weight; this is due to the improvement in nutrition, and is the natural consequence of good nights, increase of appetite, improved digestion, and relief of pain and mental depression.

Increased Disposition and Capacity for Mental and Physical Labour.—Whatever tends directly or indirectly to improve nutrition, must of necessity increase the capacity for intellectual and muscular toil. Accordingly we find patients who were so feeble that even a short ride or walk was fatiguing, and who were signally deficient both in the will and the capacity for exertion, soon begin to develop under treatment an activity and vigour that are sometimes surprising. These effects are even more perceptible on the brain and nervous system generally, than on the muscles. Uncertainty of memory and inability to concentrate the mind on any object, are usually very trying symptoms in nervous exhaustion, and these yield in a remarkable manner to electric applications.

The strength of the current employed is of the first importance. In all conditions of the central nervous system very mild currents should be used at first, which may be gradually increased if necessary; the same rule holds in applications to painful and irritable parts. Peripheral applications to muscles should have just sufficient strength to excite contractions. One rule should be borne in mind by the operator. It is always better to err on the side of mildness; the idea that the beneficial results will be in proportion to the strength, which the patient can be brought to endure, is wrong, and acting on it mischievous; experience proves that mild

currents alone do good, and that much may be lost by painful applications.

Considerations in altering the strength of current.

The bodily condition and age of the patient must be considered in regulating the strength of the current, fat being a bad conductor, corpulent persons bear a stronger application than lean ones; and for the same reason perhaps, children can as a rule tolerate peripheral currents of greater strength than thin elderly people. In the employment of either current, the aged must be treated with the greatest care and caution, as they are easily prostrated by a power which would barely affect the middle-aged.

Individuals who bear stimulants and tonics badly, are very easily affected by any form of electricity.

Length of application.

The period during which the application should last at each sitting depends entirely on the nature of the disease and its locality. The operator must bear in mind, that during the time the current is flowing, important chemical and vital processes are being induced, and these may be carried too far. A patient may be overdosed with electricity as he may be with quinine, iron, wine, or any other restorative or tonic. As a general rule, ten minutes for the galvanic, and fifteen for the faradic current, are sufficient; but the discretion of the operator must be exercised in shortening or prolonging these periods.

Galvanic current to be applied for less

The galvanic current should be applied for a shorter time than the faradic, and central applications should rarely continue longer than half the

period given to peripheral ones. The head, cervical spine, and sympathetic, require the shortest applications; the extremities the longest; the abdominal viscera, about the mean between the two. In faradising a succession of muscles, one minute should be given to each. time than the faradic.

Except in neuralgias no applications should be repeated oftener than once a day, and in many cases a longer period may elapse between them, without any detriment to the progress of the cure. Where the current can be employed daily, and the case is likely to be protracted, occasional breaks in the routine may be allowed; these may extend to a week at a time. Frequency of applications.

As chronic diseases require chronic remedies, so must protracted diseases be attacked by protracted electrification, if no immediate benefit accrues. Cases in which diseases of long standing are cured by immediate treatment are too rare to be taken as a guide in prognosis. In many instances where electric treatment is indicated, some slight improvement usually appears after a few applications, if they are made with due knowledge of position, strength, and duration; but this has many exceptions, for it frequently occurs that no change is manifested for weeks, and then it suddenly occurs, and the cure becomes rapid and permanent. Protracted electrification in chronic diseases.

Electrification should be avoided in active congestions and inflammations of organs, especially of the brain and spinal cord. When improvement may be expected.

With respect to the direction of the current Direction of current

and consequent effects.

and the position of the poles, the general principle to be observed is, that the descending current and positive pole are calming in their effects, while the ascending current and negative pole are irritating; on these grounds we place the positive pole on the seat of tenderness in spinal irritation, and in neuralgias pass the descending current through the painful portion of the nerve; while in anæsthesias, motor-paralysis, and ataxies, we reverse the current. In all these cases we benefit, but the rule must be taken subject to the modifications which the operator's experience may bring to bear on it; for although founded on conclusions drawn from electro-physiological experiments, it is not always to be relied on, and in the present state of our knowledge it must be occasionally waived.

Franklinisation.

In very aggravated cases, electrical saturation by franklinisation, may be relied upon as almost specific. The patient, seated on an insulated chair, is put in direct communication with a Holtz or Tœpler-Holtz machine, from which streams of electricity flow gently and quietly into his body, so gently and quietly, he is scarcely aware of their presence beyond a pleasant vibratory sensation; this condition may be kept up for fifteen or twenty minutes, during which time every tissue of the body, no matter how minute or remote, becomes gradually permeated with the delicate and subtle fluid, without any cognisance on the patient's part beyond the pleasant tremulous sensation already men-

Electrical saturation.

tioned, a slight increase in the pulse, a gentle perspiration, and slight flushings of the face. M. Charcot describes this as an electrical bath, and employs it with great success at the Salpêtrière Hospital in spinal irritation, nervous dyspepsia, and dysmenorrhœa. Dr. N. B. Morton Locomotor ataxy. has been equally successful with it in locomotor ataxy, and Dr. Bartholow in functional impotence in the male. In all these instances, as well as the cases of hysterical paralysis and chorea cured by the late Dr. Addison of Guy's Hospital, sparks were drawn by a conducting rod from the spine and such other portions of the body, as the special features of the case pointed to.

In Mental Derangements and in Melancholia, due to bodily weakness, the galvanic current will be found most useful, and in the many ailments due to spinal exhaustion, mild streams of galvanism along the course of the spinal column, combined with general faradisation, will, in a short time, remove the most trying symptoms and restore the energy of the spinal cord.

Hysterical Paralysis, and the various visceral neuralgias, rarely fail to succumb to electrical treatment, and in some forms of impotence both galvanism and faradisation may prove curative.

In the functional form of impotence which succeeds excesses, abstinence and faradisation will not unfrequently speedily effect a cure. A very frequent condition, the importance of which the unfortunate subjects of it frequently exaggerate, Functional impotence.

is the following: frequent nocturnal losses, escape of seminal and prostatic fluid on the least venereal excitement, imperfect erections, ejaculation on the least contact. The despondency, mental preoccupation, and the feelings of moral wretchedness which accompany this condition of the sexual organs, allow scarcely any other feelings or thoughts to occupy the mind, and hence the impaired memory, the failing attention, &c. &c., on which they lay so much stress. The pathological conditions requiring correction need not be enumerated here: the direct application of the constant current, followed by the electric brush, usually removes them, and with them the associated mental troubles.

In cases of profound nervous exhaustion, central galvanisation combined with general faradization, produces certain and permanent results. They are essentially the same force, but have certain therapeutic differences consequent on their mode of production. The same may be said of franklinism, or frictional electricity.

Franklinism.

Uselessness of galvanic chains, &c

As nervous exhaustion is strictly of central origin, that is to say, dependent on impoverishment of nervous force, from imperfect nutrition of the nerve cells, situated in the brain, the spinal cord, and the ganglionic system, it must be clear that galvanic chains and belts and other appliances used locally, can have no influence upon the disease.* The suffering centres

* Sham Electrical Appliances, see Appendix, p. 175.

must be appealed to in the manner already mentioned, and that only by the expert, as **Caution.** nothing so surely disappoints and is so likely to do mischief in these affections, as the ignorant and unskilful application of these forces, as powerful for evil as for good.

In *Brain Exhaustion* the galvanic current, applied on the forehead and nape of the neck for one minute, and for the same time from one mastoid process to the other, daily for a short period, will gradually improve the cerebral condition. When it is associated with a generally depressed state of the assimilative functions, much benefit will be derived from central galvanisation and general faradisation.

Treatment by Suggestion.—Dr. Liebeault of Nancy, and Dr. Charcot in Paris, have had considerable success, in the treatment of various functional derangements, and mimetic ailments, by inducing in the patient a slight form of hypnosis, and while in that condition making various suggestions to him bearing on the removal of the symptoms of which he complains.

It is said to be successful in removing from the drunkard the craving for drink, but requires to be kept up for an indefinite period, as the influence in these cases is somewhat unstable.

Where there is a deficiency of will power, an impression made on the weakened sensorium during hypnosis, if persistently repeated for a certain period, would most probably be attended with satisfactory results. But enough has not yet

been done in this new field of practice, at least by the scientific physician, to warrant us in resorting to it as a reliable means of cure.

In deciding upon the course of treatment, to be pursued in each individual case of nervous exhaustion, whether local or general, I must call attention to what I have already stated—viz., that each case requires to be treated on its own merits; family history, early habits, profession or occupation, period of life, sex, temperament, are all important factors in modifying and even creating the peculiar conditions enumerated in the early part of this work, and must be carefully noted for the influence they may be exercising upon the patient's condition. Six individuals suffering from perturbations in the same nerve centres, and pathologically speaking, identical in the nature of their disease, will, from the many peculiarities of constitution, &c., just described, differ materially in their symptoms, and each will require special modifications in their treatment, although the central mischief is in each case the same.

The Weir
Mitchell
Treat-
ment.

To complete these observations on treatment, it is necessary to refer to that particular method, with which the name of Dr. Weir Mitchell, of Philadelphia, is so honourably associated.

As the subject is important, and requires to be dealt with at some length, I have placed it in a section by itself.

SECTION IV.

THE WEIR MITCHELL TREATMENT.

IN nervous women, and delicate and highly sensitive men, a very aggravated form of nervous prostration frequently prevails. This is usually accompanied with great muscular weakness and emaciation, more or less marked, a state of blood which has evidently undergone important modifications in its healthy constituents and a condition generally, to which the term nervous cachexia may very properly be given.

These patients have generally exhausted all the methods of treatment already mentioned, as well as others, less professional, without benefit—often, if you believe them, with the opposite results.

After so many failures, the Weir Mitchell treatment, in these cases, undoubtedly holds out the best prospects of complete cure. It is based on the doctrine I have so frequently advanced, that the loss of nervous force, and of the power of generating it sufficiently and continuously, for the due fulfilment of all the vital processes, mental and physical, is due to a starved state of the great nervous centres, and that such starvation

is consequent upon the blood being badly supplied with the requisite nutrient principles. I cannot do better here than quote, at some length, the professor's own observations on the subject.

He says: "A portion of the class last referred to, and which I have yet to describe, is one I have hinted at as the despair of the physician. It includes that large group of women, especially said to have nervous exhaustion, or who are defined as having spinal irritation, if that be the prominent symptom. To it I must add cases in which, besides the wasting and anæmia, emotional manifestations predominate, and which are then called hysterical, whether or not they exhibit ovarian or uterine disorders.

"Nothing is more common in practice than to see a young woman who falls below the health standard, loses colour and plumpness, is tired all the time, and by and by has a tender spine, and, soon or late, enacts the whole varied drama of hysteria. As one or other set of symptoms is prominent she gets the appropriate label, and sometimes she continues to exhibit only the single phase of nervous exhaustion or spinal irritation. Far more often she runs the gauntlet of nerve-doctors, gynæcologists, plaster jackets, braces, water treatment, and all the fantastic variety of other cures.

"I see every week—almost every day—women who, when asked what is the matter, reply, 'Oh, I have nervous exhaustion.' When further questioned, they answer that everything tires

them. Now it is vain to speak of all these cases as hysterical, or merely mimetic. It is quite sure that in the graver examples, exercise quickens the pulse curiously, the tire shews in the face, or sometimes diarrhoea or nausea follows exertion, and though, while under excitement, or in the presence of some dominant motive, they can do a good deal, the exhaustion which ensues is out of proportion to the exercise used.

“I have rarely seen such a case that is not more or less lacking in colour, and which had lost flesh: the exceptions being these troublesome instances of fat anæmic people. . . .

“Perhaps a sketch of one of these cases will be better than any list of symptoms. A woman most often between twenty and thirty years of age, undergoes a season of trial, or encounters some prolonged strain. She may have undertaken the task of nursing a relative, and have gone through this severe duty with the addition of emotional excitement, swayed by hopes and fears, and forgetful of self, and of what every one needs in the way of air, and food and change, when attempting this most trying task. In another set of cases an illness is the cause, and she never rallies entirely, or else some local uterine trouble starts the mischief, and although this is cured, the doctor wonders that his patient does not get fat and ruddy again.

“But no matter how it comes about, whether from illness, anxiety, or prolonged physical effort, the woman grows pale and thin, eats little, or if

she eats does not profit by it. Everything wearies her—to sew, to write, to read, to walk—and by and by the sofa and the bed are her only comfort. Every effort is paid for dearly, and she describes herself as aching and sore, as sleeping ill and awaking unrefreshed, and as needing constant stimulus and endless tonics. Then comes the mischievous *rôle* of bromides, opium, chloral, and brandy. If the case did not begin with uterine troubles, they soon appear, and are usually treated in vain, if the general means employed to build up the bodily health fail, as in many of these cases they do fail. The same remark applies to the dyspepsias and constipation, which further annoy the patient and embarrass the treatment. If such a person is by nature emotional, she is sure to become more so, for even the firmest woman loses self-control at last under incessant feebleness.

“If no rescue comes, the fate of women thus disordered is at last the bed. They acquire tender spines, and furnish the most lamentable examples of all the strange phenomena of hysteria.

“The moral degradation which such cases undergo is pitiable. I have heard a good deal of the disciplinary usefulness of sickness, and this may well apply to brief and grave, and what I might call wholesome maladies.

“Undoubtedly I have seen a few people who were ennobled by long sickness, but far more often the result is to cultivate self-love and selfishness and to take away by slow degrees, the healthful

mastery which all human beings should retain, over their own emotions and wants.

“There is one fatal addition to the weight which tends to destroy women who suffer in the way I have described. It is the self-sacrificing love and over-careful sympathy of a mother, a sister, or other devoted relative. Nothing is more curious, nothing more sad and pitiful, than these partnerships between the sick and selfish, and the sound and over-loving. By slow, but sure degrees the healthy life is absorbed by the sick life, in a manner more or less injurious to both, until, sometimes too late for remedy, the growth of the evil is seen by others; usually the individual withdrawn from wholesome duties, to minister to the caprices of hysterical sensitiveness, is the person of a household who feels most for the invalid, and who for this very reason, suffers the most. The patient has pain—a tender spine for example—she is urged to give it rest. She cannot read, the self-constituted nurse reads to her. At last light hurts the eyes: the mother or sister remains shut up with her, in a darkened room. A draught of air is supposed to do harm, and the doors and windows are closed, and the ingenuity of kindness is taxed to imagine new sources of like trouble, until at last, as I have seen more than once, the window cracks are stuffed with cotton, the chimney is stopped, and even the key-hole guarded. It is easy to see where all this leads to: the nurse falls ill and a new victim is found. I have seen an hysterical,

anæmic girl kill in this way three generations of nurses. If you tell the patient, she is basely selfish, she is probably amazed and wonders at your cruelty. To cure such a case you must morally alter, as well as physically amend, and nothing less will answer. The first step needful is to break up the companionship, and to substitute the firm kindness of a well-trained hired nurse.

“Another form of evil, to be encountered in these cases, is less easy to deal with. Such an invalid has by some unhappy chance to live with some near relative whose temperament is also nervous and who is impatient or irritable. Two such people produce endless mischief for each other. Occasionally there is a strange incompatibility it is difficult to define. The two people, who, owing to their relationship, depend the one on the other, are, for no good reason, made unhappy by their several peculiarities. Life-long annoyance results, and for them there is no divorce possible.

“In a smaller number of cases, which have less tendency to emotional disturbances, the phenomena are more simple. You have to deal with a woman who has lost flesh and grown colourless, but has no hysterical tendencies. She is merely a person hopelessly below the standard of health, and subject to a host of aches and pains, without notable organic disease. Why such people should be so hard to cure, I cannot say. But the sad fact remains. Iron, acids,

travel, water-cures, have for a certain portion of them, no value, or little value, and they remain for years feeble, and for ever tired. For them, as for the whole class, the pleasures of life are limited by this perpetual weariness and by the asthenopia which they rarely escape, and which, by preventing them from reading, leaves them free to study day after day their accumulating aches and distresses.

“Medical opinion must, of course, vary as to the causes which give rise to the familiar disorders I have so briefly sketched, but I imagine that few physicians placed face to face with such cases would not feel sure that if they could insure to these patients a liberal gain in fat and in blood, they would be certain to need very little else, and that the troubles of stomach, bowels and uterus, would speedily vanish.

“I need hardly say, I do not mean by this, that the mere addition of blood and normal flesh, is what we want, but that their gradual increase will be a visible result of the multitudinous changes in digestive, assimilative and secretive power in which the whole economy inevitably shares. . . .

“If I can add largely to the weight, and fill the vessels with red blood, I am usually sure of giving general relief to a host of aches, pains, and varied disabilities.”

The following case which I recently had the opportunity of treating, illustrates very fairly that state of nervous exhaustion in which the Weir Mitchell treatment is usually successful.

It cannot be taken as representing the extreme form of the ailment as described in the remarks I have just quoted ; but it is a good average example of the condition so frequently induced by an exhausted nervous system.

Miss —, *æt.* 27, of a delicate, nervous constitution but average health until four years ago. At that time she was pursuing her studies at the Academy of Music, and gave up her whole time and energies to them ; after obtaining a high place in the examinations, she took up with equal energy the study of the higher mathematics in which she also distinguished herself. By this time her nervous system was much shaken, she complained of severe neuralgias in the head, both frontal and occipital ; under excitement, or if spoken to suddenly had a feeling at the vertex as if a crushing weight had just dropped on it. Feelings of unreasoning panic began at this stage to affect her, she could not bring herself to ride in a conveyance of any kind ; if left by herself in a room in which there was a knife or any other cutting instrument, was seized with terror lest she should be tempted to injure herself. Similarly, if in a room where any loose money, not her own, was lying about, the dread of being tempted to take it was almost unbearable, while at the same time she had not the least desire to possess it. Her temper became irritable, she slept badly, appetite entirely failed her, she lost all pleasure in her studies and in every form of amusement, became emaciated and exhausted and

at last passed into a state of complete invalidism passing her days in bed or on a sofa.

When I first saw her, she was too indifferent to life and health to complain of any special symptoms. As she had gone through the usual routine treatment for nervous young women, I suggested removing her from the home roof, placing her under the care of an efficient nurse, dieting her, applying massage and electricity—judiciously and in fact the whole Weir Mitchell treatment.

As she was totally indifferent as to treatment she submitted without difficulty, and at the end of eight weeks—during which time the full course was carefully pursued—I had the pleasure of returning her to her family in excellent health, mental and physical. Her mind had recovered its natural balance and her body had increased 30lbs. in weight.

I have no doubt she would fall back, and most likely pass into the same nervous and exhausted condition again, if she pursued the same manner of life, but there is every reason to believe she values too highly her renewed health to run the risk of losing it again.

These cases in women might be multiplied, but a description of one, fairly illustrates them all.

A similar condition not infrequently occurs in men. Not only in the delicate, sensitive, and badly developed, who have been partial invalids since puberty, but in the active professional and business men, in whom the daily strain of severe

mental work has brought on a train of symptoms similar in many particulars to those just described.

Many men whose lives are passed in the wearying round of an exacting business or profession, and who have no time to dwell on the earlier warnings of brain fag, suddenly find themselves unequal to their ordinary avocations. They become emotional, lose their self-control, and their mind-grasp, with all the other symptoms of failing nerve force.

To this class no ordinary holiday is of more than temporary benefit; they come back to work freshened up and hopeful, but their powers soon give way again. Rest, mental and physical, is indicated, and if the patient can be prevailed upon to follow the treatment, even in a modified form, the happiest results may reasonably be expected.

The following case exemplifies this:

H. J. D., *æt.* 34 years, 5 ft. 11 in. height, weighs 9 stones in ordinary summer dress, measures 33 in. round the chest. He is of a highly emotional family and has never been in very robust health.

Became unfit for business two years ago, was sleepless, very dyspeptic, irritable and got perceptibly thinner, went to Carlsbad and afterwards to St. Moritz for change and treatment; and then back to business, but was unable to remain at it more than a few months, through excessive nervousness.

His present symptoms are, great emaciation and exhaustion; insufficient sleep, waking at 4 A.M., and remaining awake with his mind much perturbed by unpleasant thoughts, appetite bad, much discomfort and flatulence after meals, mind confused, no firmness of will, memory defective, very despondent with tendency to dwell on his ailments, and take a gloomy view of everything connected with his position in life, which is prosperous and assured.

He was placed under treatment, which consisted of complete rest, careful and frequent feeding in small quantities, electricity and massage with for medicine, phosphide of zinc, cod-liver oil and extract of malt. At the end of six weeks his digestion was fully established, and two weeks later, he was equal to a considerable amount of exertion without fatigue, his mind and will were restored to a healthy standard, he slept well, was in good spirits and looked forward with pleasure, to the prospect of a sea voyage which he was advised to take before returning to business. As already stated he weighed nine stone before he commenced treatment; at its termination he had gained two stone and nine pounds.

Another case may be quoted here, as it occurred in a gentleman naturally robust and self-reliant, and illustrates forcibly, the condition to which a strong and vigorous constitution may be brought, by excessive overwork. H. C. W., *æt.* 36 years, height 5 feet 10 inches, weight 11 stone. Engaged in business from 9 A.M. till

7 P.M. A harassing, trying business in which he has been engaged since his twenty-first year. About five years since began to be nervous, this has gradually increased on him, until now he finds his mental clearness defective, he cannot grasp the details of business without an effort, his memory is treacherous and a general feeling of malaise seems to spread over him, on the least exertion. His hands tremble so, he cannot write legibly in consequence. In the evening he is in a state of almost collapse, until he retires to bed, where he sleeps well till about 4 A.M., when he lies awake till morning, all his affairs passing through his mind in a confused manner. Is much exhausted on rising, but recovers somewhat a little later in the day. Walks with an effort as if fatigued. Does not care to talk to people, the effort being too great, and, as a consequence, if he meets an acquaintance on a railway platform, will go into another carriage to avoid him.

On the least worry or excitement, such as being summoned as a witness, is threatened with a peculiar sensation at the lower part of the spine, which passes down both legs to his feet, then travelling upwards, covers the chest, neck, face, and hands. This feeling is attended with great palpitation, flatulence, mental confusion and much general exhaustion. These attacks will occur when alone, or in the dark, if his mind is perturbed by his thoughts. Has been losing flesh lately, and feels soft and flabby.

The same course of treatment was pursued in this case as in the last, and continued for a little over eight weeks. The recovery was very gradual at first, but towards the end became well marked, and eventually reached an almost normal standard. The weight increased by 26 lbs., and the mental condition, as well as the physical, was restored.

In all similar cases, on recovery, care must be taken lest a relapse ensues, as happened in one instance, where the patient relying on his renewed health and spirits, entered too soon and too vigorously into his old pursuits.

Patients cannot have it too forcibly impressed upon them, that a return to the causes which brought the break-down, will assuredly bring it on again, and that for the future they must so shape their lives and pursuits, as to keep well within the bounds of health.

APPENDIX.



General Nervous Exhaustion.—When an individual complains of more or less prostration, which cannot be traced to ordinary physical causes, as blood poisoning, albuminuria, loss of blood, or other important material of the animal economy, and where no lesion of cerebro-spinal tissue can be detected, his condition may be safely surmised to be the result of molecular perturbations, and consequent loss of force, in some portion of his nervous centres.

It is the physician's duty to determine where the origin of the malady lies; and this may be done satisfactorily, if he bear in mind the close connection maintained between the brain, spinal cord, and sympathetic systems, and the various organs whose functions are entirely controlled by one or more of these great centres.

When the exhaustion is induced by habits of a reprehensible character, the seat of the malady must be looked for in the special centre, which supplies the nervous force to the particular class of organs most abused. Thus "the man of pleasure," be he glutton, drunkard or rake, or a combination of these, when overtaken by severe nervous prostration, will indicate by his symptoms, the special "path or paths of pleasure"

he has followed, and the physician will be enabled, by the process of trying back, to localise the particular centre or centres affected.

In many instances, all the great nervous centres are implicated, in a greater or less degree, and it then becomes a matter of some difficulty, to apportion to each, its exact place in the general functional disturbance.

Nervous exhaustion arising from no error in the habits of the patient, but coming to him by inheritance, often exists without functional derangement. This form of the disease rarely afflicts the sufferer at all times, but comes and goes without any appreciable cause. The recurrence or duration of the attack, seems to observe no fixed rules, and is most capricious in its frequency and length, but when it does come, the symptoms are almost invariably the same; a sudden indescribable but most disagreeable sensation is experienced at the epigastrium; to this is added in a few moments a peculiar sensation in the head, which quickly passes off, leaving behind a pervading feeling of profound exhaustion and misery; which may continue for weeks or months, and disappear as suddenly as it came, to return at some future but uncertain period. Patients thus afflicted will describe the moment of relief, as if an unknown something had passed out of them; others as if they had passed through a cold dark cloud into warmth and sunshine. The manner in which the invasion appears and disappears, points to the solar plexus as the fountain of mischief, and it is to it that treatment should at first be promptly and steadily directed, if we are to cut short the attack or prevent its extension to other nervous centres.

A careful examination of symptoms with a view to

tracing them back to the particular portion of the nervous centre or centres from which the exhaustion originates, is of vital importance to the patient. It furnishes the only reliable evidence on which treatment, whether therapeutic, electric, or combined, can be based with any certainty of success. It has been shown, that particular tracts of the great nervous centres, are affected by particular remedies, and that the brain and nerve substance itself, can be directly nourished and restored, by the internal employment of substances, having in combination the principal elements, of which that vital tissue consists. So also can the nerve centres, trunks, and branches be affected by currents of electricity, which judiciously applied to the faulty ones, can allay their perturbations, assist their natural currents, and by improving their nutrition, ensure the generation of sufficient nervous force, for the exigencies of life.

The nervous exhaustion of the brain-worker, is usually associated with considerable functional derangement in some large organ, as the brain itself, the heart, the stomach ; in such cases as already stated sleeplessness, irritability of temper, palpitations, flatulence, occipital heaviness and ache, giddiness, and lumbar pains, torment the patient—all symptoms of reduced nutrition, unrepaired waste, and corresponding lowering of vitality and diminution of power. When it does occur without much complication, there is generally some slight dyspeptic symptom present—a distaste for food, with, most likely, considerable flatulence. In this state the cerebro-spinal system of nerves is at fault, there being little or no derangement in the sympathetic system.

Partial or entire loss of sleep, usually accompanies this condition, and is often a cause as well as a consequence of increased nervous exhaustion. It is attended with many serious complications, and while it may in many instances be but a symptom, amongst others, of an irritable and exhausted nervous system ; in some, and that a not insignificant number of instances, when persistent, it constitutes a specific disease in itself.

The activity of the cerebral and sensorial ganglia undergoes in health a periodical suspension, more or less complete, the necessity of which arises from the fact, that the exercise of their functions is in itself destructive to their substance, so that if this be not replaced by nutritive regeneration, they speedily become incapacitated for further use.*

Sleep is this periodical suspension of activity, in which the necessary nutrition and repairs of the nervous system, go on with increased vigour. It is a period when there is not only an increase of nutrition, but a suspension of waste also, for the process of disintegration, of both nervous and muscular tissues, is almost entirely suspended during it, as proved by the lessened amount of phosphoric and uric acid contained in the urine, formed during this period of repose. A state in which waste is arrested and nutrition increased, is too essential to healthy life, to be interfered with or suspended, without serious results ; consequently we find that persistent sleeplessness may be the forerunner, of serious changes in the brain or spinal cord, which later on will manifest themselves more decidedly,

* Carpenter's Physiology, edited by Power, p. 649.

by producing well-known nervous diseases. It may also be a cause of morbid changes, especially in the brain, and many cases of insanity are recognised by psychologists, as distinctly traceable to this cause.

To the nervous invalid sleep is vital, and where it is deficient or wanting, the physician cannot hope to cure his patient, or even relieve his least pressing symptom, until this most important function is restored.

Functional derangements of large organs, as the stomach, liver, heart, &c., will induce sleeplessness, and the physician must remove these errors of function, before natural and refreshing sleep can be obtained in such cases. Of more importance is the sleeplessness of the overtaxed brain-worker, to whose mental faculties repose is vital, and whose undue waste of nerve tissue, while it imperatively demands the process of restoration for the healthy fulfilment of its labours, is in itself an actual cause of sleeplessness. The over-taxed brain, whether exhausted by too much labour, or excited by powerful passions or emotions, or irritated by petty cares and worries, cannot settle to rest and restoration, but wears itself still further down by its wakefulness. In this manner the effect reproduces the cause in a more extended degree, and waste goes on until the organ is seriously damaged. To duly repair the nervous wear and tear of active occupation, one-third of the daily life of the individual should be given up to repose; in old age, and where the processes of nutrition are slow or feeble, even a longer period is essential to complete restoration.

In many exhausted and emaciated persons, labouring under no apparent ailment but nervousness, con-

siderable excess of urea will be found in the urine. In these cases there is great languor and indisposition to active exertion with lumbar pain more or less severe. The appetite may be good, and a fair amount of nourishing food taken, yet the patient gets visibly thinner, weaker and more nervous, and it is evident there is a serious fault in the powers of assimilation; the nourishment taken, instead of repairing the tissues, undergoes a chemical instead of a vital change, and is rapidly converted into urea, and carried out of the system by the kidneys. Sometimes the disease takes on an intermittent form, the presence of urea in excessive quantities in the urine, manifesting itself only at one particular period of the day, preceded by coldness of the body, and considerable constitutional disturbance, and followed by profuse perspiration.

The presence of large quantities of oxalate of lime in the urine, is a not uncommon symptom, in the highly nervous; it is always associated with defective assimilation, and many serious symptoms affecting the nervous systems. The accumulation of oxalic acid in the blood, of which this condition is an evidence, exercises a poisonous influence on the great nervous centres; this shows itself in a capricious, irritable, and emotional, or dull, melancholy and despairing state of mind, with perpetual dread of some coming misfortune, or deep-seated and undiscovered disease. The digestive organs may also be at fault, and the patient may be plagued with weight and pressure at the pit of the stomach, flatulence, palpitation, loaded tongue, dry skin, irritable pulse, dingy countenance, and in a further extension of the disease, with general wasting, falling off of the hair, a tendency to boils and car-

buncles, bleeding from the intestines or bladder, incontinence of urine, and impotency, all of which are due to increasing accumulation of oxalic acid in the blood.*

Where from overwork of the mental faculties or other causes, there is more than the normal amount of disintegration taking place in the brain tissues, phosphoric acid is eliminated and shows itself in the urine in the form of the alkaline phosphates, the excess being in exact proportion to the activity of the changes taking place. Much care must be exercised in determining this excess with accuracy, as phosphoric acid is a normal excretion in health, being obtained from the food taken, as well as produced in the body by oxidation of the phosphorus contained in the albuminous textures. The nervous dyspepsia of brain-workers is frequently associated with an excess of earthy phosphates, but this is quite apart from disintegration of brain tissue. A deposit of urates more or less copious is a by no means uncommon occurrence amongst this class of sufferers: if its appearance is only occasional it may be passed over as of little consequence, but if of daily occurrence, it is too important to be overlooked, as it is a certain proof that chemical changes connected with the nutritive processes are at fault.

Cerebellar exhaustion extending to the sympathetic and spinal systems and affecting more particularly the lower dorsal, lumbar and sacral portions of the cord, is usually the result of sexual excesses. In this

* *Vide* Prout, Begbie, and Beneke further on this subject; and also Neubauer and Vogel on the Urine.

condition the patient usually complains of a peculiar feeling of jar, extending from the occiput along the whole course of the spinal column, and down the inner edges of the arms to the tips of the fingers, particularly the little and ring fingers, also down the lower limbs as far as the heels—a sensation graphically described by a sufferer, as if he had jumped from a height and alighted on his heels, on very hard ground. This jar is the consequence of what I can give no better name to, than chronic concussion, as it is evidently produced by a series of sudden shocks, to those nervous centres, from which the sexual organs receive their nervous supply.

The amount of constitutional disturbance, produced by severe seminal loss, is often so excessive as to give rise to the most alarming feelings in the patient. Not only are the alimentary, respiratory, and circulatory functions affected, as evidenced by dyspepsia and constipation, difficulty of breathing, palpitation of the heart, &c. &c., but giddiness, loss of memory, confusion of thought, liability to sudden panics, irritability of temper and despondency, evidence that the brain itself has lost the balance of health. A peculiar tenderness of the surface, with wandering pains in various parts of the trunk and limbs, and dryness, hardness, and a generally perished state of the skin, with obstruction, distension and inflammation of the sebaceous follicles (acne) are very common in this state.

Many patients of this class have paroxysmal attacks of prostration, generally referable to the epigastrium in the first instance, and usually preceded by a sudden undefinable and distressing feeling of dread, somewhat of the nature of the aura which so frequently precedes an epileptic seizure.

The following extracts from a patient's written account of himself, give a more graphic description of the miseries of this state, than anything which the most experienced physician could relate:—

“I am now aged thirty years. My health first became impaired about ten years ago. My illness at that time commenced with distressing nervousness. I was afraid to be left alone in a house for fear of doing something to myself; the thought of a razor being near me, in a drawer, with which I might commit suicide, produced the most intense feelings of alarm, and I trembled all over, ready to sink through the floor at the idea of such a thing being possible! I felt most wretched and miserable in the extreme. I was apprehensive to a degree as of some impending danger, expecting each hour would be my last on earth! I occasionally experienced a strange sensation in my throat, and was constantly swallowing saliva for an hour or more at a time, and a feeling as if I should be suffocated. I remember one Sunday evening, in chapel, while listening to the preacher, this sensation came on, and I felt as if I should have fallen to the floor or been obliged to cry out hysterically, while I trembled all over as if from fear. I also had a sense of suffocation, a curious indescribable feeling in my chest, after eating a meal—if more than a certain quantity. I had sometimes to get up and leave the table in consequence of this, and lie down in my own room to recover. While partaking of tea one evening, a feeling of faintness crept over me, as if my heart had stopped its pulsations. It was with an effort that I drew my breath, though not as from suffocation, but from complete prostration and extreme exhaustion. I continued two or three

hours in this state, could not speak, but did not lose consciousness. I recovered, taking hot brandy and water at intervals. About a week after this, while walking home from the station, another of these attacks came on, and it was with the greatest difficulty I got home, and when I did I was more exhausted and prostrated if possible than on the former occasion. I used the same means as before. After this I had several attacks of the same nature, some lasting longer than others, and one day I had two attacks. The last one I had, ended with violent palpitation of the heart, which continued a considerable time. In consequence of these repeated and prostrating attacks I could hardly speak, and when I did do so, scarcely above a whisper. I felt it at my heart right through to my back and down the spine. After a few days I attempted to walk, but could not proceed more than a few steps at a time without stopping from a feeling as if my heart would cease beating. In the above attacks, during the last hour or so I was in them, I trembled violently from head to foot, like a person in an ague fit. I have never been the same man since that time. About a year afterwards I recovered sufficiently to return to my duties, but six months afterwards I finally gave way, from sheer want of strength. I was completely done up, could not walk or stand for many minutes together, so I resigned my appointment, and was recommended by a physician to take a voyage to Australia, and if the climate agreed with me to remain for some length of time. I was very weak when I went on board, and was reduced to the last stage of exhaustion by excessive and prolonged sea-sickness. When I arrived at my destination, and for some

months afterwards, I could not walk or stand for ten minutes together. I was better when I left five months afterwards, and able to walk about a mile twice a day.

“ My present symptoms (and for more than three years past) are as follows:—I suffer much from my head, being unable to read or write, or do anything requiring thought or attention for longer than five or ten minutes at a time, without producing much pain (and a sense of fulness) on either side of the head, above the head and behind the temples. The only way I can read a book or write a letter, is to do so for five minutes, and rest five minutes; in this way I can get through a good deal during the day, not exceeding two or three hours at a time, with a rest of an hour or so between.

“ My walking powers are very limited. I cannot walk for more than twenty-five minutes at a stretch, or fifteen minutes four times a day. If I exceed this time it produces exhaustion all over, especially felt about the chest, while my legs from knee downwards ache very much. I am unable to talk or sing for long (a few minutes at a time) without much internal fatigue, felt about the region of the heart, and I am often compelled to keep quiet. There are constant ringing, singing voices in my ears and specks floating before my vision. Bowels are not regular, generally acting every alternate day, but sometimes two or three days pass without going to stool. Appetite moderately good, digestion weak; and I sometimes suffer pain from the throat downwards—a burning sensation. I have involuntary twitchings in the muscles of my legs, and nervous twitchings in my eyelids and side of my

face occasionally. I have sometimes felt an object between my thumb and fingers to be larger than it really is. I also feel a trembling, bubbling sensation about the heart, as from impeded bad circulation, and the same down my arms. On lying down in bed at night I distinctly hear the pulsation of my heart, and particularly on placing my ear on the pillow.

“I always dream directly I fall asleep; and no matter how short my sleep or how often I wake, I have always been dreaming. I sometimes experience the feeling of falling down a height just as I am going off to sleep, and start up in a fright. When sitting quiet sometimes I experience a strange feeling at the centre of my body below the chest, as if something was going to happen to me, and my heart begins to beat violently as if from excitement.”

As a comfort to other sufferers of the same class, I may state, that this gentleman eventually attained robust health, married, and succeeded in establishing a large and remunerative business—which now, ten years since his illness, he still conducts.

The aim in treating the various forms of nervous exhaustion must be, to allay the molecular perturbations, restore the true nerve currents, and improve the nutrition of the great nervous centres themselves. To effect this, diet and regimen are of great importance, as already explained in the chapter on the general principles of treatment, and the remedies which exercise the most beneficial influence on the exhausted tissues, must be employed either alone, or in such combinations as the case may indicate.

In conditions of exhausted nervous force, as distinguished from actual degeneration of nervous tissue,

insomnia is so common a symptom, that a return to calm and refreshing sleep is a sure indication of increased nervous power. In fact, the amount of sleep obtained without artificial means, may be taken as the surest indication of the progress made towards restoration and permanent recovery.

The necessity for sleep being as essential to life as food itself, it becomes a pressing duty on the part of the physician, to endeavour to induce it in the patient suffering from its loss; before employing opiates and other hypnotics, he should see what effect can be produced by hygienic means. A proper amount of exercise should be taken during the day, the diet light and digestible, the bedroom well ventilated, and at a mild and uniform temperature; the pillows firm and high, the hour of retiring early and regular. The functions of the brain should be kept in as quiet a state as possible, if sleep is to be procured naturally; for that reason all mental strain and excitement should be avoided, for one or two hours before bed-time. Should sleep not be procurable by these means, a tepid sponge bath, or a foot bath as hot as it can be borne, may be administered immediately before lying down, and to this treatment may sometimes be added with considerable advantage, especially when much exhaustion is present, a warm and gently stimulating drink, as white wine whey, mulled claret, thin gruel with a table-spoonful of brandy in it.

When much nervous irritability is present without any lesion of structure, large doses of bromide of potassium, or moderate doses of chloral hydrate will generally induce refreshing sleep. When the sleeplessness is accompanied by extreme nervous depression it

may, in most instances, be overcome by bromide of morphine, and in cases of cerebral irritation with irregular heart's action and fear of going to sleep, bromide of strychnine may be prescribed with much advantage.

When success has not been attained by the means already suggested, it is for the physician to consider the desirableness of employing the various preparations of opium or belladonna, conium, henbane, Indian hemp, &c. &c., either in the ordinary way or hypodermically.

Failing any permanent benefit from these, or even before employing them, if the insomnia be complete and persistent, and the patient is evidently much distressed by his extreme wakefulness, electricity should be resorted to; the particular form of electricity and mode of application, will depend in a great measure, on the cause of the wakefulness. Simple sleeplessness without any complication which can be detected, usually yields to general faradisation. Other forms of insomnia require galvanisation of the cervical sympathetic and the heart, or of the head and spine, or peripheral galvanisation; any, or all of these methods in turn, may be used as seems best to the practitioner, who must in all instances be guided by, not only the accompanying symptoms, but the success attending the applications, for each case must be taken on its own merits and studied by itself.

Immediate and permanent improvement in sleep must not be expected, after one or two electrical applications, but it rarely fails to manifest itself after six or eight applications, provided they are judiciously

used, and the variety and method selected is fairly adapted to the case.

When the cerebrum is most at fault, the overtaxed and exhausted brain must be restored by agreeable rest and nourishment, and by the administration of one of the metals, the various salts of which are at the disposal of the physician, to fulfil the necessary indications ; and from these he may make his selection as the circumstances require.

Small doses of cod-liver oil, where the stomach will tolerate it, may be given with much benefit in such cases, especially if combined with phosphorus, or taken in conjunction with one of the hypophosphites.

Cerebellar exhaustion alone, or complicated with exhaustion of the spinal cord, is best treated with iron—either the phosphate or perchloride—and nux vomica or strychnine, followed by phosphorus, and the continuous current from the occiput to the sacrum.

The exhaustion induced by severe seminal loss pervades the whole circle of the nervous systems, and must be combated by such combinations of remedies, as will, without neutralising their individual efficiencies, cover the entire range of exhausted structures.

In the capricious nervous exhaustion due to hereditary tendency, the sympathetic and pneumogastric nerves are usually most at fault. When such is the case, arsenic and nux vomica are the most reliable remedies ; in fact, their influence is almost specific, but they must be given with great care, not so much from dread of overdosing as from fear of the dose not being retained long enough in the system to be assimilated. Care must be taken in employing arsenic, to arrange the dose and the occasion of taking it, so that

the mucous lining of the alimentary canal may not be irritated. This is of great importance, as neglect of this caution will render the remedy useless, confuse and disappoint the physician, and weaken his means of cure.

Where morbid states of urine are present, proper means must be taken for their removal. The presence of urea in excess demands prompt attention, as it shows partial arrest of the oxidising processes in the body and consequent diminished nutrition. If the excretion of urea is intermittent, as already described, full doses of quinine will be attended with the best results. In the more general form, plenty of fresh air, a more farinaceous and less animal diet, good action on the skin, moderate exercise, and a light vegetable bitter with one of the mineral acids, will most probably be all that is required. Should this treatment fail, the excess of urea may be considered as depending on exhaustion of the spinal cord, and is best treated by applications of the constant current to the spine. Cases of this description are of frequent occurrence, and yield more readily to the galvanic treatment than to any other.*

The presence of oxalic acid in excess in the urine must be speedily remedied, its accumulation in the system giving rise to the disease termed oxaluria. Here attention to diet is most important, all saccharine matters must be excluded from it. The skin must be kept in an active state, by the judicious employment of tepid baths and warm underclothing, and the internal

* For an interesting case of this description, *see* Althaus, "Treatise on Medical Electricity," 3rd ed. p. 618.

remedies must be such as will directly neutralise the oxalates present, and prevent the chemical changes which result in their formation. Of these, nitrate of potass and the nitric and hydrochloric acids will be found the most potent. Should the disease be of long standing and its influence on the heart and nervous systems serious, peripheral faradisation will afford powerful assistance in the elimination of oxalic acid from the blood.

Phosphates in the urine, whether alkaline or earthy, usually yield to careful dieting, assisted by mental rest and agreeable change, if the patient is suffering from anxiety, overwork, or excitement. The internal remedies which are most successful in these cases, are vegetable bitters with mineral acids, perchloride of iron, sulphate of zinc, benzoic acid, benzoate of ammonia, strychnine, and under certain circumstances, alkalies.

One powerful factor for evil in the production of severe nervous exhaustion, must be recognised in syphilis, the changes it produces in the elementary structure of the nervous centres, especially the sympathetic, are of the most serious description, passing, if not arrested by treatment, from interstitial deposits which are removable, to structural degeneration of the most hopeless character.* Where atrophy, colloid degeneration, or fatty metamorphosis has not taken place, everything can be done by the persistent employment of large doses of iodide of potass, in such

* See further on this subject Petrow in Virchow's "Archives," 1873, or A. R. Robinson in the "American Journal of Syphilography and Dermatology," April, 1874.

combinations as the special features of the case, past and present, indicate.

The deposit of considerable quantities of urates in the urine of nervous patients, often gives rise in their minds to much uneasiness, and increases the despondency to which, under any circumstances, they are too prone. These sediments are increased by imperfect action of the skin, too full diet, excess of stimulants, and less than the needful amount of exercise. Nervous dyspeptics are often over-nursed by anxious relatives, and these amorphous deposits are sometimes the consequences of such mistaken kindness, and can best be remedied by air, light and healthful exercise, the use of the bath, and moderation in food and stimulants. Should the deposits arise from causes beyond these, very gentle aperients, followed by the salts of vegetable acids or small doses of phosphate of soda in some simple bitter infusion, will arrest the morbid chemical changes in the system, on which these deposits depend.

In all cases, without reference to cause, where there is much nervous irritability, watchfulness, despondency, alarm, or sense of impending although unknown danger, considerable disturbances of the vaso-motor nerves may be suspected. These will yield to the bromides alone, or in very stubborn cases to peripheral faradisation in conjunction with them. Very slight cases are benefited by gentle sponging night and morning, with cold or tepid water over the body, particularly the loins, abdomen, and spine; this has a very calming effect, and induces better nights and more cheerful days.

The uncertainty of memory, feelings of alarm, and confusion of the mental faculties, associated with most forms of nervous exhaustion, gradually pass away as

treatment begins to take effect. Their subsidence may be taken as the best evidence that the proper remedies are employed ; some of the minor though still unpleasant symptoms may remain a considerable time, or come and go in a most tantalising manner before their permanent removal can be fairly depended on.

It is almost needless to remark that where the exhaustion is the consequence of the patient's own acts, no treatment will avail unless these acts are at once and entirely avoided.

When the case is of some standing, or of so aggravated a character as to resist the influence of the usual remedies, central galvanisation alone can be relied upon to effect a cure. The influence of the continuous current in restoring molecular balance, and removing all the distressing symptoms produced by its loss, has been already pointed out in the account of the experiments of Ranke and Du Bois Reymond, and should be taken as direct evidence of the benefit to be looked for.

The current should not be continued for more than fifteen minutes at a time ; it should be very mild, and not repeated oftener than once daily.*

Nervous Weakness.—“ Every physician encounters cases in the course of his daily practice, chiefly, if not wholly originating in the higher walks of life, which may affect either one of the various departments of the nervous system. As a rule, there is no anatomical basis for them, and certainly, any severe anatomical changes seem to be excluded by the entire nature and course of the symptoms observed. Such are the cases

* Reprinted from the Author's work on Neurasthenia, now out of print.

which have been classed under the names of nervousness, nervous exhaustion, &c. &c.

“ Careful observation quickly shows that this nervous weakness is capable of assuming various forms, and affecting different parts of the nervous system. In some cases the entire nervous system is more or less affected; in others the brain chiefly; and in others still, the functions of the spinal cord.

“ Abundant experience has shown that these cases are not rare, and are of great practical consequence, for they cause much anxiety, not only to the patient, but also to the physician, owing to the striking resemblance they possess to the first stages of severe structural disease.”—*Ziemssen*.

The Nervous Constitution.—“ One of the most powerful predisposing agencies in the production of nervous diseases is the so-called *neuropathic disposition*, that peculiar disturbance in the nutrition of the nervous apparatus, which lessens the resistance of the latter to all possible injuries, and increases the tendency to disease in a definite direction.

“ This condition is certainly congenital in most instances, and is transferred from parents to children. Whole families and many generations may thus be burdened and cursed with a feeble power of resistance, on the part of the nervous system.

“ In many the effect is seen in a general highly nervous disposition; all possible manifestations of it may be noted in neuralgias, epilepsies, hysterias, tabes, &c. &c., and each individual may be affected only in that portion of his nervous system accidentally subjected to a special strain. It is not at all necessary that the parents should have suffered from exactly

the same form of nervous ailment; their children merely inherit a general disposition of the nervous system to disease, which may manifest itself in various ways under various circumstances. The exaggerated susceptibility to disease, on the part of the nervous system, especially the cord, may also be acquired by a variety of circumstances, which must be reckoned as predisposing.

“Of these, sexual excess and irregularities occupy the first place. Excessive indulgence in the exercise of the sexual functions certainly produce symptoms which point to a weakness and a diminished functional capacity on the part of the spinal cord; weakness of the legs, inability to stand for a long time, trembling when forcible movements are made, pains in the back, shooting pains in the legs, sleeplessness, &c. This may often be noticed in the newly married, or in persons who have indulged in great excess for a short time. If the causes of these symptoms soon disappear, the damage done is quickly repaired; but if the excesses are continued, further injury or even positive disease, occurs. Any external injury, exposure to cold or fatigue, or excessive walking, may then bring on the worst results. In very young persons, not fully grown, these evil effects are most quickly perceived. Youth has immense power to repair damage, but the consequences of early squandering of power often appear later in life.

“The effects of unnatural gratification are even much worse.

“Excessive exertion of any kind in the nervously disposed will produce exhaustion of the spinal cord—overtraining for athletic sports, and all other muscular

acts which go beyond the natural powers—especially if associated with prolonged exposure to cold, as in winter campaigning, &c. Fright, alarm, disgust, &c., may produce grave disturbances in the nervous system, which occasionally localise in the spinal cord.”—*Erb*.

Functional Weakness of the Spinal Cord.—“Observed in persons who are subject to the general symptoms grouped under the popular name of nervousness, but in this affection the functions of the cord are affected in a special degree. This affection usually occurs in neuropathic families, and the male sex is more liable to be attacked than the female sex. Youth and middle age suffer most from the disease; it is more common in the upper than lower classes, and it is sometimes a sequel of typhus, variola, and other exhausting diseases. The exciting causes are excessive mental or bodily emotion, the dispensing emotions, and sexual excess.

Patients complain chiefly of great weakness of the lower extremities, accompanied by an intense feeling of fatigue on slight exertion, and in some instances this weakness may increase to a slight degree of paralysis. A dull feeling of weariness is, indeed, often felt by the patient in the lower extremities in the morning before rising, and after prolonged exertion this feeling may be accompanied by occasional tremors of the legs and a remarkable stiffness and pain of the muscles of the lower extremities, similar to that produced in a healthy man by prolonged marching. Symptoms of rapid exhaustion and fatigue may be observed in the arms also, but never reach the same intensity as in the legs.

“The sensory disturbances consist of pain in the

back, which is aggravated by the movement of the muscles, slight exposure to cold, or venereal or other excesses. The patient may complain of a diffused sensation of burning in the skin of the back, especially between the shoulder-blades or over the sacrum; and this feeling is usually accompanied by sensitiveness of some of the spinous processes, such as occurs in spinal irritation. Neuralgiform pains may be present in the extremities, not unlike the lightning pains of locomotor ataxy, but they are never of long duration, although they are apt to recur after unusual exertion. The patient also complains of numbness and formication, especially in the lower extremities, and of cold hands and feet, or occasionally of a burning feeling in the feet, while the body is apt to be bathed in sweat at night, or during the day, on slight exertion.

“The sexual functions are generally more or less disordered, there is diminished power of erection and premature ejaculation, and the act of coition is followed by remarkable prostration, disturbed sleep, and a fidgety, restless feeling in the lower extremities.

“There may be a little dribbling of urine, but the functions of the bladder are usually normal. The patient is much troubled with sleeplessness, and feels particularly prostrate in the morning. He complains of a sense of constriction of the head, is self-conscious and timid, and manifests a strong tendency to shed tears.

“Dyspepsia, along with constipation, flatulence, and palpitation, is frequently present, and patients are often hypochondriacal, and live in constant dread of tabes dorsalis, or some serious affection of the cord. The general nutrition is impaired, the patient loses

flesh, acquires a sallow look, and becomes anæmic. There is always great sensitiveness to cold and change of weather.

“The disease may occasionally begin rapidly, but, as a rule, it develops gradually, and increases in severity for weeks or months, and then remains more or less stationary. Slight fluctuations in the intensity of the symptoms are common. Under proper treatment the disease begins to yield slowly, but months often elapse before a permanent cure is effected.”—*Ross*.

Nervous Exhaustion.—“This term designates a condition which is known by physicians as *neurasthenia*. It may be defined, in short, as a lack of nervous force. It often exists in pallid, bloodless people, and disappears when the patient’s general condition is so improved that the blood-producing organs again perform their functions properly, and the individual acquires again the ruddy glow of health. Yet it often happens that nervous exhaustion exists in individuals whose general appearance would not lead any one to suspect any serious disease; the person may be stout and of full habit, may have a good appetite and digest the food well, and yet may be, and feel, quite incapable of performing those duties which he had previously fulfilled without difficulty.

“The affection seems usually to proceed from an improper degree of activity of some part of the nervous system, more especially in the exercise of the mental faculties. It seems also to be subject to certain hereditary influences; the children of parents who have suffered from chronic diseases of the nervous system, such as epilepsy, hysteria, and insanity, are especially prone to the manifestation of nervous exhaustion.

Physicians, especially those who practise in large cities, are often consulted by individuals who, although manifesting no well-defined disease, are evidently not in good health. It is possible that these cases do not receive as much attention from friends of the person, or even from the physician himself, as they deserve : for the tendency to complain, to exaggerate slight indisposition, is so common, that unless there is some definite and tangible derangement of the body, the tendency is to ignore and make light of the symptoms presented. In nervous exhaustion, moreover, the indications of the difficulty are of a subjective rather than of an objective character : that is, they are symptoms which the patient can himself feel, but which no one else can perceive.

“The subjects of nervous exhaustion complain of lassitude, a want of buoyant feeling, an indisposition for exertion, mental depression, and sometimes wandering pains and aches are felt in various parts of the body. Such individuals are wakeful at night, and arise with a sense of fatigue and a feeling that their sleep has not refreshed them. When stimulated by some unusual excitement they are capable of the usual exertion, but when the excitement has subsided they feel exhausted. Such patients usually fancy that they have some serious disease, and often become melancholy at the thought that their powers are being undermined, and that they are ‘in a decline.’

“A careful examination of the different organs usually fails to disclose any evidence of disease. The heart, lungs, kidneys, &c., are healthy. The physician is apt to regard such patients as the victims of their own imagination.

“Yet this condition is in many cases real, not imaginary. By a little inquiry it becomes manifest that such patients have been usually long harassed by the cares and responsibilities of business, by excessive devotion to study, or by some similar strain on the nervous system. In many cases this overwork is combined with carelessness and neglect in diet and habits of life.

“This disease is essentially and pre-eminently an affection of modern society.

“This condition of nervous exhaustion is by itself a serious affection, and may indirectly induce or aggravate numerous other ills ; for it favours the development of diseases to which the patient may be predisposed, and aggravates the effects of such ailments as he may acquire.

“It would be impossible to detail all the symptoms which may be caused by this condition of nervous exhaustion. Some of the more important ones will be, however, briefly discussed.”

“*Spinal Irritation* is a manifestation of nervous exhaustion which afflicts many of those engaged in active mental effort, and is especially common among women who are subject to diseases of the womb. In this condition there is extreme tenderness all along the spine ; there are usually flying pains, especially in the chest and abdomen ; and the occurrence of hysteria, as well as of convulsive spasms of the limbs, is a frequent symptom.

“This condition of spinal irritation is usually periodical, and is especially apt to occur after over-exertion or excessive emotion. In nervous women it occurs particularly during the period of menstruation.

“ There are also conditions which seem essentially the same as spinal irritation, though there is no tenderness on pressure along the backbone. The condition is manifested by unpleasant and annoying sensations in different parts of the body. Some individuals suffer from neuralgic pains in the limbs ; others have throbbing sensations in the chest and in the head. Another symptom is itching, which may occur in any part of the body without apparent cause, and may be quite intense and persistent.

“ One of the most distressing symptoms is the wakefulness of such patients. They lie awake and toss about for hours, and perhaps fall into a heavy sleep towards morning, from which they awake without feeling much refreshed. This condition is obstinate, and may not yield even to the bromide of potassium or to chloral, unless taken in excessive doses.

“ Another manifestation of nervous exhaustion is dyspepsia, which is rarely so distressing as those forms of dyspepsia which result from organic disease of the stomach, but is nevertheless a source of much annoyance and uneasiness to the patient.

“ The special senses are also liable to derangements. Among the most common of these are specks before the eyes, which appear especially when the individual feels exhausted. Another occurrence is noise in the ears, which sometimes takes the form of a continual humming, and sometimes appears as sudden and loud noise.

“ One of the symptoms of nervous exhaustion, which is brought to the notice of the physician with especial frequency, is derangement of the sexual functions. This may take the form of *impotence*, partial or com-

plete. This is often manifested by a loss of sexual power before the appetite disappears. Under these circumstances the patient is extremely depressed and despondent, as a result of which the symptoms are aggravated. Sometimes this sexual weakness takes the form of seminal emissions. These are of course natural, and in perfect accord with health and those who are continent; but in conditions of nervous exhaustion these emissions are apt to occur with far more frequency than in health. These emissions when excessive are of themselves somewhat exhausting, but they are specially important as indications of nervous prostration. The popular idea ascribes to seminal losses the symptoms which occur in the individual at the time: in other words, the emissions are assumed to be the *cause* of the patient's prostration. As a matter of fact they are the *result* rather than the cause of the condition, and the patient's despondency should be relieved by the assurance that when his general health shall be improved, this symptom will disappear, provided there be no organic disease of the sexual organs.

“In females nervous exhaustion is manifested by pain and unusual prostration at the time of the menstrual epochs. Here also the menstrual disorders are the result rather than the cause of the nervous prostration accompanying them.

“There may be in various parts of the body derangements of motion and of sensation, which are to be explained simply by the general condition of the patient, and not by any local disease. Thus it may happen that certain portions of the skin become quite numb, and remain so for hours or days at a time; in

other cases certain parts, such as a finger or toe, an arm or a leg, become extremely sensitive both to pain and to changes of temperature. At times, too, there may occur what seems to be a genuine paralysis; the patient loses control of fingers, of thumbs, or even of the entire hand or forearm. In other instances twitchings of the muscles are constantly observed; this is especially frequent in the muscles of the eyelids. Such patients are annoyed by the consciousness that they are constantly winking, and yet they are unable to control the eyelid.

“Occasionally such patients are troubled also with unusual diffidence, and even timidity, which sometimes manifests itself by an aversion to society; this is particularly apt to occur in those whose nervous exhaustion takes the form of sexual incapacity.”

This entire subject has been admirably summarised by a recent writer on the subject, as follows:

“In regard to the above symptoms, it may be remarked that they are not imaginary, but real; not trifling, but serious, although not usually dangerous. The interchangeableness of these symptoms is also noteworthy. In nervous exhaustion, nothing is constant except inconstancy. The symptoms chase each other like the shadow of summer clouds across the landscape. The moment one leaves, another and several stand ready to take its place. In a single day one may go through the whole gamut of all these notes of disease.

“The periodical and rhythmical character of some of these symptoms is of much interest. I once had under treatment a young man who had attacks of nervous depression every day about noon; they lasted

but for a short time, but were as periodic as chills and fever, and, like chills, passed through definite stages.

“Nervous exhaustion is compatible with the appearance of perfect health. For this reason, as well as on account of the slippery, fleeting, and vague return of their symptoms, patients of this class get but trifling sympathy. Sometimes they are fat and hearty, and have a ruddy vigorous appearance, suggestive of strength; sometimes, also, they grow fatter as they grow worse. Noticeably the disappearance of symptoms in the stomach, and the appearance in their stead of symptoms in the brain and spinal cord, is followed by increase in weight that deceives the friend, the physician, and even the patient himself. Thus it happens that patients get the least sympathy when they most need it.

“The diagnosis of nervous exhaustion is sometimes entirely clear, and again is quite difficult. If a patient complains of general malaise (indisposition), debility of all the functions, poor appetite, abiding weakness in the back and spine, fugitive neuralgic pains, hysteria, sleeplessness, disinclination for consecutive mental labour, severe and weakening attacks of sick headache, and other analogous symptoms, and at the same time gives no evidence of anæmia or of any organic disease, we have reason to suspect that the general nervous system is mainly at fault, and that we are dealing with a typical case of nervous exhaustion.

“Chronic nervous exhaustion—of which form I am chiefly speaking—may result in paraplegia, in general paralysis, in neuralgia, in uterine disturbances, in dyspepsia, in chorea, in hysteria, and in actual insanity,

or under proper treatment it may go on to perfect recovery.

“Chronic neurasthenia sometimes proves directly fatal without causing organic disease; but such a termination is not usual. It is a chronic condition, and patients afflicted with it may last for half a century.”—*Baird*.

Treatment.—“Nervous exhaustion usually requires, first of all, complete relief from care, anxiety, and exertion. It is not desirable that the patient should entirely relinquish his occupation; but a respite for a certain period seems absolutely necessary.

“Not less important is the avoidance of errors in the habits of life. The inordinate use of stimulants, excesses of any kind, &c., are, of course, to be avoided. The best sanitary regulations also should be observed, and one of the most efficient remedies that can be employed is a course of sea-bathing. If this cannot be procured, the cold bath in the morning at least, or morning and night if the patient can bear it, is a good substitute.

“The diet should be generous and varied, even though the patient may already seem to have an abundance of flesh. Among the remedies to be employed two are especially valuable—electricity and massage. Exercise should be provided for, but not taken in excess, since exercise of the body requires exertion on the part of the nervous system. In some cases severe measures have been employed to relieve spinal irritation; small blisters and even the white-hot iron have been applied along the spine. Such measures must, of course, be used only under the advice of the physician, since in every case it is the

patient and not the *disease* that is under treatment. The drugs that are to be used vary in different cases."

—*Lyman*.

Shyness.—"None but those afflicted with this disease of shyness can rightfully understand the torture to which it dooms the victim of its mysterious pain. It is a disease, a pain, which takes all the sweetness out of life, all the joy out of pleasure, all the sunshine out of summer. It destroys the morality of self-respect, and blurs the clear line between truth and falsehood, reality and seeming. It annihilates the physical senses—making one deaf and dumb and blind for all the essential purposes of ears, tongue, and eyes. Shyness is one of the things which, bred in the bone from the birth, comes out in the flesh for all the years that time may last. Much intercourse with the world may pare away some of the larger excrescences and fine down some of the sharper edges; but it is always there, to be brought to the surface under every new or unusual condition. Even in quite old age this painful quality keeps its hold on the character; and that strange anomaly—a shy old woman, or haply a shy old man; for this disease is common to both sexes—shrinks from the rude touch of strength, or the strangeness of novelty, or the shame of self-revelation, like a school-girl whose nerves seem to lie on the outside of her skin.

"Shyness takes all forms and puts on all disguises. The sufferings undergone by the unhappy beings who, to hide what they are, make themselves appear what they are not, are of the most poignant description. No day passes wherein shy persons do not make for themselves needless distress; and when at night, in the solitude of their own thoughts, they go back on

the deeds of the day and calmness produces clearness, what must their sufferings be when they remember their ungainly gesture as they handed the cup or took the chair, or shook hands across the table, or came stumbling into the room, or, meaning to be complimentary, blundered into an impertinence; when they grieve over the good things they might have said, and just missed—groan over the foolish words they blurted out as if they had been stones catapulted by some fiendish power behind them! We ought to be very tender with naturally shy children; those of us who have passed through the same ordeal can remember what we suffered in our day of small beginnings and unused experiences, and by ourselves we can judge for them. We ought never to forget that what to us is necessary is to these shy neophytes in life's mysteries a trial of nerve and courage for which Nature has made them utterly unfit. A hard-hearted parent ignores all this faint and delicate tracery made by Nature, and insists upon uniformity with the rest of the young world. The doctrine of idiosyncrasy finds no favour in eyes which would treat all characters alike; a shy, shrinking, nervous temperament is handled with the same careless strength of grasp as a bold and fearless one. If it is foolish to pamper shyness, it is cruel to coerce it. In this, as in everything in life, we should be guided by common sense: and between those who would indulge shy children in all their shrinking sensitiveness, and so let them set permanently into this mould, and those who would brutally ignore all need for tenderness, and treat them as roughly as the bold and strong, the *via media* is the only good and rational plan. And being this, it is the most difficult to hit and the rarest to find."

Blushings.—“ A very common effect of nervous exhaustion, in both sexes, is frequent and severe blushing from the slightest possible mental or physical causes, and extending sometimes, not only over the face, forehead, and ears, but down the neck and apparently over other portions of the body. Suddenly meeting any one, a stranger or acquaintance, the hearing of an unexpected noise, the taking of food or drink into the stomach, especially if rapidly swallowed, any stooping, or straining, or any slight muscular or mental exertion, may bring on this unpleasant, perplexing, and annoying symptom. In some cases the symptom appears without any objective cause whatever : the person may be sitting alone, and the face, under some thought, or fear, or anxiety, or feeling of responsibility, may become as red as though suddenly entering company.

“ Some of the peculiarities of blushing are very interesting. A lady patient of mine, who is of a very sensitive organisation, tells me that when she blushes, little red spots resembling measles first appear on the cheeks, and then extend down over the neck ; in a moment these coalesce into a diffused redness.

“ In nervous exhaustion this symptom of blushing is more common and distressing than is generally believed ; I have seen strong and vigorous men, when neurasthenic, blush like young girls. Some young men are so harassed by it, they cannot meet young ladies in the street, or go into any company of their own sex, without blushing excessively, and on this account keep away from society altogether.

“ Many persons, although suffering severely from other symptoms of nervous exhaustion of disagreeable character, complain more of this blushing than of all

the other symptoms combined, and for this chiefly seek advice.

“Like many of the other phenomena of neurasthenia, this blushing may come and go—lasting for months and years, and disappear as suddenly as it came. Like sick headache, it has a tendency to disappear as life advances. It is also as amenable to treatment as other symptoms of neurasthenia.”—*Beard*.*

Nerve Intoxication.—“If the work of the temperance societies had, as a rule, been one which in its results commended itself to rational people, we should have liked to see these organisations enlisted in a campaign of which the purpose should be the modification, the limitation, or even the eradication of the vice of nerve intoxication, unhappily so widely prevalent in our time and country. It is much the fashion in this part of the world to throw the responsibility for all excesses, and consequent derangements of the nervous system, upon the climate, and there is probably enough truth in the charges to keep the proposition alive; but there is really no more justice in placing the blame of mental intemperance upon the weather than that of narcotic or alcoholic. It may be, in either case, that our over-bracing atmosphere incites to indulgence in the vice, but so long as men are recognised as being free moral agents, facts of this sort may be received in explanation, but not in extenuation. There has probably never been a people so given to this particular form of self-indulgence as are Americans. The prevalence of

* This subject has been dealt with exhaustively in a recent work—viz., “Flushings and Morbid Blushings,” published by H. K. Lewis, 136 Gower Street, London

nervous exhaustion, that *delirium tremens* of nerve inebriety, is sufficient evidence of the extent of the vice among us, were any proof of the sort needed where it is openly and shamelessly flaunted in our faces every day. The Salvation Army is one of the means of gratifying the unnatural longings of victims of this evil habit. What a new dram is to the drinker a new excitement is to the nerve-debauchee. Sometimes the coveted stimulus is found in politics, sometimes in science, very often in business, with its stock gambling and speculations innumerable. There are a thousand fashions of pampering to the vicious taste, and of them none is more common and more difficult of eradication than overwork. That nerve intoxication is a vice will hardly be denied by any candid and clear-minded person; and no one who has given the matter any attention can fail to realise how serious the evil has become. The increase of all forms of nervous disease; the spread of insanity; the constant tendency towards feverish conditions of life, all are grounds for the most serious disquiet and apprehension. We are fast becoming a race of inebriates, whose inebriety is far more dangerous than any drunkenness with spirit or drug—the subtle and destructive vice of nerve intoxication.”

Neurasthenia.—“When the symptoms set forth as characteristic of this ailment are carefully examined, it will be seen that they constitute an assemblage of incoherent indications of disorder borrowed more or less freely from inchoate forms of insanity and from almost every disease of the nervous system; that they are not characteristic of any definite disorder; that divisions of them belong to disorders the most diverse;

that no common law of treatment can be safely applied to them. But hidden within such terms as agoraphobia, claustrophobia, and the like, there are symptoms, various but related, which any one with sufficient experience and competent faculties of observation and critical analysis, can easily discover, arrange into a well-defined group, and present to clinical medicine under the justifiable name of mere and sheer nervousness. For the most part they present the appearance of health. Always excitable and sometimes depressed, they are often animated and joyous; procrastinating, fragmentary, and inconstant, they are, nevertheless, to be found among the greatest workers of the times; talking occasionally for hours without fatigue, they are sometimes silent and grave; for the most part fastidious, refined, and cultivated, they fall occasionally under the dominion of the lower emotions; habitually tormented by a physical self-consciousness, they can yet efface themselves in their devotion to others; disposed to the flesh and the world, they often attain to the greatest heights of the spiritual life; always ailing, they are seldom ill; often condemned to premature death, they live, as a rule, long beyond the average duration of life; and regarded by the hard, stolid, and superficial with feelings akin to contempt, it is nevertheless from them, far more than the other class of persons, healthy or disordered, that we get all that is truest, best, and noblest, in science or letters, art or song.

“Such are some of the more prominent external characteristics of sufferers from nervousness. If we engage in a critical study of the symptoms of nervousness, with the view of coming to a nearer and clearer

understanding than we now possess of its nature, we must inquire into its internal characteristics, and endeavour to discover among them what may be called the proximate constituents of that state of which nervousness is the main external expression.

“The chief dynamic nerve states which, combined in various ways and degrees at different times, give rise to the symptoms of nervousness, are :

“1. A too rapid production and expenditure, together with an irregular distribution of nerve force.

“2. An abnormal sensitiveness and freedom of communication throughout the whole nervous system.

“3. An unstable equilibrium of the whole nervous system, especially excessive in the vaso-motor centres, whereby are brought about, in nervousness, the flushings, blushings, and pallor of tissues and organs.

“4. Disturbances of the general regulatory or special inhibitory powers.

“5. A recurring state of more or less intense physical self-consciousness, through which there come within the cognisance of the organism certain of its own states, disorders, and actions which lie far beyond the ordinary area of the consciousness of average persons.”

—*Abridged from Lancet, January 2, 1886.*

Reflex Action.—“When any part or point of the body, external or internal, is, in the periphery, or at the centre, irritated, some other part is liable to be in some way changed for the better or worse ; but there are *par excellence* three great centres of reflex action—the brain, the stomach and digestive apparatus, and the reproductive system. When any one of these three reflex centres is irritated, by over-use or by direct abuse, the injury is likely to radiate or reverberate in

any or in all directions ; we cannot tell just where, any more than we can tell where lightning will strike. In this way disease may be excited in parts quite distant from the seat of irritation. This accounts, in part, for the immense number and variety of symptoms and abnormal sensations from which the nervously exhausted suffer."

" *Disorders of the Genital Apparatus* in either sex are continually exciting disease in remote organs, and it is observed that in women mild irritation—slight and limited disturbance—produces severer reflex trouble than coarse and grave lesions ; superficial disorder of the cervix, for example, often inducing more annoying pains and distresses in the head, than incurable cancers ; and in men also, a little prostatitis or urethral or preputial irritation, not only phimosis, but even elongation with secretion of smegma, are constantly the sole and demonstrable origin of hypochondriasis, dyspepsia, and other nervous symptoms.

"Involuntary discharges, irritability of the prostatic urethra, and partial or complete incompetence, are both the result and causes of nervousness in man. In all cases of long standing, the reproductive system necessarily participates, sooner or later, either as a cause or effect, or as both. In very many cases, local disease consequent on abuse of these parts is a prominent exciting cause of general nervousness.

"The relation of the male genital function to the nervous system is a subject of the highest interest, and of great complexity. It is a department of medical investigation that has been far too long neglected.

"Many of the diseases belonging to woman, as woman, may be either the causes or effects of nervous-

ness. It has been the custom to regard the various nervous symptoms with which women are afflicted, as the results of any uterine disease from which they may have suffered; but the wiser gynæcologists of the present day are aware that, with women as with men, disease of the reproductive organs may be a result of exhaustion."

Oxalates, Urates, Phosphates, &c., in the Urine.—
"The relation of oxalate of lime to various nervous symptoms was long ago pointed out by Golding Bird, and the importance of examining the urine for the deposits of oxalates was strenuously insisted on by him. As a matter of routine, I have for years been accustomed to have the urine of my neurasthenic patients examined, and in the majority of cases it is found that the oxalates, and in some cases the urates, are in great excess.

"The term 'oxaluria,' so often applied to this condition, is quite analogous to the term 'spinal irritation,' as applied to tenderness of the cord, with accompanying symptoms, so often observed in neurasthenia. These oxalates and urates in excess are the results of mal-nutrition of the nervous system."

Massage.—This process differs materially from shampooing, which falls far short of it in curative results. It may be divided into four stages, all or any one of which may be suitable to the necessities of the particular patient requiring this kind of treatment.

The first stage consists in simply pinching the skin over the body and limbs; this is not disagreeable by any means, but in the hysterical it may, at the commencement of treatment, bring on unpleasant emotional attacks, which soon, however, pass off as the patient

becomes accustomed to the sensation, when it is positively agreeable.

In the second stage the muscles are acted upon ; this is done with both hands of the operator, which seize the muscular tissues and work them firmly but gently with the palms and fingers. In dyspepsia, liver ailments, and sluggish bowels, this variety of massage, applied to the abdominal muscles, has a singularly beneficial effect.

In the third stage, tapping with the tips of the fingers, beating gently with the palms of the hands, and hammering with a pleximeter tipped with an elastic pad of india-rubber, is resorted to. The hammering, as in the system of percussion already described, when properly done, sends vibrations at a distance from the point touched, and not only stimulates the skin and underlying muscles operated on, but the surrounding and more remote parts.

In the fourth stage, all the joints, great and small, from the fingers to the toes, are moved backwards and forwards a number of times.

When massage is properly carried out by a skilled attendant, its effects are in many particulars like those produced by judicious faradisation: pain is relieved, sleep induced, and the nervous dread of the unknown, which so frequently distresses the neurasthenic, is removed, and self-reliance takes its place.

The operation of massage, when carried out in all its stages, may last from a half to a whole hour ; it is best used alternately with faradisation, and may be continued on alternate days with it, for six weeks or two months.

Exophthalmic Goitre.—" We are possessed of a truly

efficacious method of treatment in electricity, and it is carried out in the following way:—

“ 1. The positive electrode, with a large rheophore, is applied to the posterior and inferior part of the neck and the negative electrode, with an olive-shaped rheophore, is strongly pressed upon the region of the carotid artery, under the angle of the lower jaw. It is found that the effects of faradisation are much more telling than those of galvanisation. In some cases there is an immediate change in the colour of the cheek upon the faradised side, while the temperature there is lowered, and the feeling of orbital tension either diminishes or disappears. The two carotid regions are successively faradised at the same sitting.

“ 2. The negative electrode is then passed lightly over the eyelids, so as to cause contraction of the orbicular muscles.

“ 3. The thyroid tumour is faradised, and the sternohyoid and thyroid muscles, which should be made to contract.

“ 4. Lastly, the præcordial region is galvanised. The large rheophore connected with the negative poles being retained at the nape of the neck as before, the positive pole, fitted with a large flat intercostal rheophore, is applied to the inner part of the third interspace. The force of the current should vary from 50 to 70 dix millièmes (ampere). With this last part the violence of the heart-beats diminishes at once, even if their frequency remain the same; but it is always the most difficult part of the treatment to permanently modify the heart's action. The whole sitting should occupy from ten to fifteen minutes, equally distributed. It should be repeated every alternate day. It is only

exceptional to find cases which resist this treatment or do not improve, but months or sometimes years may pass before complete recovery occurs, and relapses are common. In some cases the patient is compelled to relinquish business on account of the affection. In treatment particular attention must be first directed to remove the exciting causes of the affection. Great attention must be paid to the regimen and diet of the patient. His work should be light and agreeable, and he should retire to rest at an early hour. His food must be nourishing and easily digestible. Alcoholic beverages may be allowed in moderation, and open-air exercise, short of fatigue, should be enjoined.

“An ascending stabile galvanic current, of moderate intensity, should be applied to the vertical column. Iron, quinine, and strychnine are useful internal remedies, but require care in their administration. Chalybeate baths are useful in the anæmic. Such symptoms as sleeplessness, pains, spermatorrhœa, impotence, and digestive disorders must be treated in the usual way.”—*Charcot*.

Sham Electrical Appliances.—A recent number of the *Electrical Review* calls public attention to the vendors of “bogus electrical belts” and other worthless appliances, constructed with the ostensible object of employing electricity as a curative agent. The following description, which is taken from its pages, of two of these contrivances, will be of interest as showing the way in which some self-styled medical electricians—men, we should hope, utterly ignorant of both medicine and electricity—will trade upon a capital misrepresentation: “First, we have a specimen a galvanic generator, which is made thus: a small

oval frame of a bituminous character contains a similar shaped but smaller zinc plate, ornamented in relief with 'lightning flashes.' Placed on this is a copper disc of similar shape, without any separating medium whatever between them. The combination is perfectly dry, and we need scarcely say, absolutely useless. The second is a magnetic appliance, which may be a so-called chest protector, or anything else. Sown up in a semi-circular piece of silk we find twelve feebly magnetised pieces of crinoline steel, and this is all ; yet the price of the article is said to be 35s." A correspondent in the same paper adds that on the production and advertising of such rubbish £20,000 a year is profitably spent. Yet some of us think it strange that the medicine-man "should be able to impose his antics upon uncivilised negroes."—*Lancet*.



